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AMERICAN ANALYST.

AMERICAN ANALYST.

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A HAPPY NEW YEAR.

In beginning Volume X, we wish all our subscribers a happy and prosperous New Year.

WHAT THEY SAY ABOUT US.

"It is the most satisfactory publication I receive." ARTEMAS BIGELOW.

THE OLEO PERSECUTION.

What the New York butter trade is doing in their endeavor to crush out oleomargarine can be seen from the following clippings from the New York evening papers. It needs no comment. The inherent weakness and injustice of the course pursued by these butter men to rid themselves of a feared rival is too apparent.

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DAIRYMEN WANT PARKHURST.

The Butter Trade held a meeting at the Mercantile Exchange recently to discuss means for the extinction of the oleomargarine traffic. Many New York firms were represented, and John Jameson of the Philadelphia Produce Exchange and W. D. Edson, also of Philadelphia, were present.

Mr. Edson spoke in favor of a Dairymen's Union and urged on the meeting the necessity of sending a delegation to Chicago in January to attend the convention to be held for the promotion of dairy interests.

All of the speakers deprecated the growth of the traffic in oleomargarine, and the conduct of Armour and other big dealers.

Mr. Jameson said that if the sale of oleo was pushed much further they would not be able to sell butter at all. The big Western oleo manufacturers would not allow commission men, he said, to make anything on the article.

He thought political influence of the creamery interest in the West ought to do something to stamp out the oleo. Despite absolute prohibition in Philadelphia the article seemed to be sold in large quantities.

The trouble, he thought, was to some extent due to the dairy commissioners, who made preparations enough, but secured too few convictions.

Mr. Winsor of this city said that there was law enough, but the dairy commissioners had not sufficient money, only $100,000 having been appropriated in this State for the protection of all agricultural interests from fraud.

They needed a Parkhurst in the dairy business. He and others were tired of putting up money to protect the farmers and creamery men because they would not help themselves.

A scheme to send a circular denouncing oleo to boarding houses will be considered further at a meeting later.

FIGHTING OLEOMARGARINE.

There were about 200 merchants present at the meeting held on the floor of the Merchants' Exchange to take some action in regard to the sale of oleomargarine.

A letter was received from the Merchants' Exchange of Baltimore, in which it was suggested that the New York and Baltimore Exchanges work together in opposing the sale and distribution of oleomargarine and butterine.

Mr. J. H. Snyder said that he did not believe it possible to proceed against any agents in this State who sold oleomargarine or butterine in the original packages, as the sale of it in that form would come under the ruling of the courts as applied to the sale of whiskey or beer in original packages in Kansas and Iowa.

W. S. Smith was strongly in favor of raising a fund by popular subscription among the trade for the purpose of prosecuting offenders.

On a motion made by J. H. Snyder it was voted that it was the sense of the meeting that an additional tax of 7 cents per pound be put upon oleomargarine and butterine. A committee of three, consisting of Messrs. W. H. Duckworth, W. Winsor and J. H. Snyder, was appointed to confer with the Agricultural Committee and the committee of ways and means with this end in view.

The meeting then adjourned until December 29.

NOTES AND QUERIES.

We are desirous of making this column of service to our subscribers and wish to have them feel at perfect liberty to ask any question that may occur to them. We will be pleased to take great pains to obtain any information we may not have. If not of general interest we frequently answer these questions by mail.

For want of space, or time to investigate, many questions received remain unanswered for some time. Each query on any legitimate subject will in its turn receive proper attention. Correspondents are requested to write plainly and state their wishes concisely.

B. F. J.: What is your opinion of the enclosed analysis of olive oil?

A.—It is absolutely worthless and bears evidence on its face that the person who made it simply copied an analysis of some olive oil made by an obsolete method, as published in a book some twenty years ago. Not having examined the oil we cannot express an opinion of the oil you mention. In purchasing olive oil, stick to well known brands and you will be safe.

R. S.: Is the statement enclosed about cod liver oil and emulsions true?

A.—It is not. Like all other *ex parte* statements made by so-called scientists employed by pharmaceutical manufacturers to run down other people's goods and to boost the employers, it is of no value and will fail of its object.

CANNED VEGETABLES.

REPORT OF INVESTIGATIONS AND ANALYSES.

BY K. P. M'ELROY AND W. D. BIGELOW.

[Continued.]

COPPER-GREENING IN FRANCE.

The whole question has probably been more extensively investigated in France than elsewhere. As is well known, in that conntry the preserving industry is one of the best developed, and the quantity of canned and bottled foods yearly exported reaches enormous proportions. For this export trade the United States is one of the most important markets. Of the foods thus preserved, canned leguminous vegetables form by far the greater proportion, and of these it is estimated by the French that 90 per cent are artificially greened, mostly by copper. This trade is comparatively old, and is firmly established. Peas, beans, etc., when coppered,

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assume a peculiar green color not altered by cooking, and resembling the color of the raw vegetable, though not at all like the natural color of the fresh-cooked legumes, and a taste for goods of this color has grown up.

The preserving of goods of this color has, until within a few years, been prohibited in France. It is true, the law has been a dead letter, but it has none the less been on the statute books. Of course, the prohibition has not been a pleasing one for the canners, and they have been persistent in their efforts for its abolition. This, however, they were not able to secure from the government for many years, in spite of the influence which so great an industry must necessarily have had. Anxious to please them, the government has appointed commission after commission of scientific men to investigate the copper question, with a view to rescinding the prohibition, should these investigations show just ground for such action. Uniformly, up to 1889, however, these commissions reported adversely, and the government could not take the desired action. In all, the struggle between the scientific Dr. Jekyll and the commercial Mr. Hyde in France lasted nearly half a century before culminating in the victory of the latter. The history of the contest is an interesting one.

In Paris, a police ordinance, dated February 28, 1853, prohibited the use of vessels and salts of copper in the preparation of food.

In 1860 the Comite consultatif d'hygiene publique on the report of a committee composed of MM. Bussy, Ville and Tardieu, recommended that this local law be made applicable to all France. The report, in substance, read as follows:

"The fact of the introduction of copper salts into preserved green vegetables and fruits has been proved. Though the amounts present are not sufficient, generally speaking, to produce serious accidents, yet the addition of an eminently poisonous substance to food, in indeterminate proportions, constitutes a danger which cannot be ignored and which the government should not tolerate. The committee does not hesitate to condemn the use of vessels and salts of copper for preserving fruits and leguminous foods."

This resulted in a ministerial decree, dated December 20, 1860, carrying this recommendation into effect February 1, 1861.

This law, however, remained a dead letter for many years, though the Parisian police went through the form of buying and examining samples in 1869, 1872, 1873 and 1875, finding no copper, however.

In 1876 public and official attention was once more called to the subject.

In that year Dr. Mice was commissioned by the prefect of the Gironde to investigate copper greening, a manufacturer having asked permission to put up copper-greened vegetables destined for export. The report of Dr. Mice was unfavorable and permission was refused.

About the same time P. Carles, of Bordeaux, examined a number of samples of canned vegetables for a Bordeaux merchant, who was anxious to send his customers in foreign countries only irreproachable goods, and in whom the bright green color of the goods he had been selling had awakened suspicion. The examination showed that they contained copper in considerable quantities. From one can were obtained 49 mg of copper oxide, equivalent to 55 mg of the sulphate. The conclusion of M. Carles, however, was:

As a can is ordinarily divided up among several persons, this quantity would not appear to present serious danger.

[To be continued.]

HOUSEHOLD.

TESTED RECEIPTS.

Every receipt here given is original, has been practically tested by the AMERICAN ANALYST and is therefore confidently recommended.

FOR CONSOMME.

Beat two eggs, add two tablespoonfuls milk, a quarter of a teaspoonful salt, put in a buttered cup, set in a pan of warm water and cook in a slow oven until firm in the centre. When cold cut in very thin inch lengths or fancy shapes. Put in tureen.

POTATO SALAD.

One and a half cupfuls of potato that are in small pieces, two cupfuls celery, pieces half an inch long, one cupful English walnuts cut in small pieces.

DRESSING.

Yelks of two eggs, a pint of oil stirred in very slowly, half teaspoonful onion juice, one teaspoonful mustard, one of salt, juice of three lemons and a little cayenne pepper. Mix the potato and celery, put the nuts on top, pour the dressing over, garnish. Serve as soon as the dressing is put on.

OMELETTE WITH MUSHROOMS.

Put into a frying pan some mushrooms that have been shredded, with an ounce of butter, some salt, pepper, a little chopped parsley and a few drops of lemon juice. Fry quickly and put in centre of omelette. Serve with brown sauce.

MUSHROOM FILLING FOR PATTIES.

Put butter the size of an egg in a saucepan, when it bubbles add a tablespoonful flour, then add half a pint of cream slowly; divide the mushrooms and put with the cream. Heat thoroughly and serve in patty cases.

PRUNE SOUFFLE.

Two cupfuls of prunes stewed until very soft, remove the stones, beat the whites of five eggs very stiff, then beat in the prunes slowly and bake about twenty minutes. Serve with whipped cream.

FOOD OF DIFFERENT NATIONS.

SPICY EAST INDIAN FOODS.

The sturdy old Dutch navigators who first navigated the treacherous Malay waters and whose enterprising descendants have made Java and Sumatra the richest jewels in the crown of Holland never neglected the inner man. To them more than to any other cause is due our knowledge of the spices, condiments and dishes which have rendered the Oriental cooks famous.

The Dutch are singularly modest, and in their East Indies take credit for only one celebrated dish, Batavian curry. It merits its celebrity, for there is nothing like it under the sun. If you go to Deli, Samarang, or Soerabaya, it matters not, your host will serve you a Batavian curry. The occasion may vary. It may be a christening, wedding, funeral feast or stag party, but the great curry never changes. It is an entire dinner in one piece. It is a meal, a whole day's nourishment in a single plate.

You prepare the way for it by a little soup and a glass of wine. This disposed of you receive one plate from the steward or "boy," as he is ever styled in the far East. It is no ordinary piece of china, but a vast soup plate out of which Goliath could have eaten. It is fifteen inches in diameter, three inches deep and nearly an inch thick. Its bulk is intended partly to secure strength, but chiefly to retain heat as long as possible. Once heated to the boiling point, it keeps hot an hour. In this great platter you first put the rice, a half pound or more, still smoking from the range. It should be levelled and formed into the floor of the coming structure. You cover the rice with the curried meat or other base. Chicken, duck, lamb, or eggs are excellent, but if you desire the best let it be equal parts of game and prawns curried in proper style.

COLORING INGREDIENTS.

The Oriental chef in currying food uses young cocoanut and cocoanut milk, clarified butter, curry powder and curry paste to form the basis of that noblest of all high-seasoned dishes. According to his fancy is the color he will give it. It may be greenish yellow, like the cheapest kind of curry; it may be white, as in Ceylon; red, as in Siam; green, as in Tonquin, or pink, as in Canton.

This part of the dish having been finished, the waiters approach you with the accessories without which no Batavian curry is complete. Of each you take one tablespoonful and lay on your meat and rice and continue until the latter is buried beneath the queerest compound extant. These accessories consist of an unlimited number of food substances, the more prominent of which are grated young cocoanut, fried chopped onion, red Macassar fish, richer and more appetizing than the finest anchovies; Bombay ducks, which are not ducks, but fishes cleaned, split and dried, and about the size and shape of a smelt and the construction of a lamprey; hot chutney and sweet chutney, chopped red chili, chopped green chili, grated fish roes from the Celebes, and sliced compressed fish roes from the Island of Formosa; hard-boiled pigeons' eggs and preserved ducks' eggs, fried bread fruit, scraped shallot, radishes cut into ribbons, sesame seeds, poppy seeds, pickled watermelon rind, and pickled sliced mango, pickled walnuts, pickled cauliflower, sauerkraut, omelet cut into dice, sliced raw tomatoes, sliced cucumber, sliced raw onion, cold-boiled green peas, and asparagus tips.

If in Rome you do as the Romans do you will help yourself to each and all of the side dishes that are offered. Nevertheless, do not take an overlarge quantity of the chopped chilis, the hot chutney or the red Macassar fish unless you have an indurated palate.

Now, with knife, fork and tablespoon, convert the mountain of heterogeneous substances and colors in your plate into a uniform mass. To do this properly demands considerable skill. You must not cut or mix the food too fine, and, on the other hand, it should be so mingled as to be quite smooth. Having finished the work you next attack it with a tablespoon, moistening the operation from time to time with wine or diluted liquor, and ending the repast with coffee and brandy or arrack. Batavia curry is a wonderful dish and it is a wonderful people that can eat it regularly and survive.

AN EGYPTIAN REPAST.

That the children of Israel yearned for the fleshpots of Egypt is pretty good evidence that the land of the Pharaohs contained many admirable cooks and kitchens. According to the stories told by Brougsch-Bey and Neroutsos-Bey the great Rameses had a very superior chef, while the martial Thotmes took particular delight in his menu cards and tableware. Nor is there any doubt that the Pharoahs killed and cooked animals, and especially the goat, for human food. The Ptolemies brought Grecian cooking into Egypt, and unquestionably taught their Coptic subjects the latest wrinkles from Macedonia and Athens. If the Greek cooking was no better in those years than it is to-day, it must have been a terribly cruel blow to the conquered.

The Romans did some good missionary work after they had annexed the delta territory and supplanted Greek gluttony with fine Latin cooking and bills of fare. As Alexandria was a favorite resort for the John Chamberlains of that period, it must have had some capital, or worthy of the capital, restaurants. At any rate they introduced the use of tunny fish, the sardine, red mullet and camprey, and all four dishes mark the daily bill of fare at the present time in the Grand Hotel, Paris.

A MODERN EGYPTIAN DINNER.

To-day finds little in the place to please the *bon vivant.* At the Hotel Khedevial, in Alexandria, Shepherd's in Cairo or the Mena House under the shadow of the Sphinx, you get the same dinner as in the second rate restaurants of New York. Occasionally you encounter a chop or steak, but it is lean, flabby, and either flavorless or else very odorous. In the so-called Arab quarters you find a nondescript cooking, which is Arab, Turkish, Soudanese, Levantine and Coptic all combined. It is well adapted for a frugal and abstemious generation living under a tropical sun, but it has little or nothing to commend it to a normal appetite and palate.

In the smaller cities, especially those lying in the triangle between Alexandria, Cairo and Port Said, you can catch glimpses of a school of cooking which, no matter how greatly changed, must contain trace of the habits and manners of the far past. A dinner here is interesting and, what is far better still, is clean and good. You secure it in an inn, restaurant, or, better still, the private house of a copt.

At such a meal there is bread, both leavened and unleavened, the former heavy and suggestive of the schwarzbrod of our German cousins, and the latter compact and brittle, like the loaves used by Hebrews in Passover week. There is no wine nor malt liquor. Mohammed seems to have had more success in the teetotal business than Father Mathew or Neal Dow, and his iron laws against the flowing bowl are universally obeyed in Egypt by the faithful. Instead of wine is coffee and sherbet. The former is from Mocha, which produces the best bean known and is made thick in Turkish style, or clear as in French. The sherbet is a hoary fraud, and is fit only to travel in company with Sunday school lemonade or circus soda water. It is sweetened water, with a suspicion of fruit flavor. The water is dirty and lukewarm. The sugar appears to be of the brown variety and the fruit flavor may be anything from a red rose to a peach pit.

FAVORITE DISHES.

The food consists of a pottage made by parboiling pieces of meat with vegetables in a large pot, preferably earthenware. In taste and appearance it is like a diluted Irish stew. It is appetizing, however, and to a hard working laborer must be delightful. Another favorite dish consists of kabobs. These are strips of lean meat coiled around an iron spit or skewer and broiled over a fire of charcoal, dried camel dung or other fuel. They are quite pleasant, resembling an overdone piece of steak. Roasted and stuffed kids and poultry are popular and excellent. The stuffing varies according to the formula of the cook, and may be made from bread, rice, pistachio nuts, almonds, chestnuts, raisins, currants and dried fruits. It is at its best when made from nuts, raisins, fruit and some cereal.

The boiled and seethed animal food differs in no way from our own. One food deserves passing notice, and that is baked cakes containing chopped up vegetables. Those which contain a modicum of shallot or of onion are extremely novel, and to many people very delicious. As for fish in the inland Egyptian towns it ranges from bad to diabolical.

A CHINESE DINNER.

There is no one that loves good eating more than John Chinaman. Like the old Roman sybarite, he has been known to spend his last coin upon a gala repast and then cheerfully commit suicide. No matter how exclusive they may be the celestial is bound to have the delicacies of the Flowery Kingdom in even the uttermost parts of the earth. Every day in New York you can see a score of pig-tailed gentlemen in the neighborhood of Mott street each carrying a huge brown paper bag. If you could open these mysterious packages you would find dessicated shrimps and prawns, pickled Amoy cabbage, delicate little tubers known as "ma-tai," bitter cucumbers, dried devil fish, Awabi clams from Japan, smoked oysters, preserved sharks' fins, pots of sweetmeats, funny looking sausages and lots of dainties for which there is no name in English. A poor laundryman will spend a quarter or a third of his income upon these luxuries, and will devote a half day of his precious time to cooking them in approved Mongolian style.

At home our almond eyed cousins go to greater lengths, and give dinners that would simply paralyze the average American health reformer. If you are ever in China or such Chinese lands as Hong Kong, Singapore or Saigon, and are invited by some mandarin or wealthy merchant to a banquet, thank Providence and go at any risk. Go with a good appetite and a well developed thirst; if possible go without eating in the preceding twenty-four hours. No matter whether you are an old friend or a perfect stranger, whether you speak your host's language or not, you are received as a prince of the realm. The donor of the feast meets you at the threshold, bows until you feel apprehensive that he will fracture his spinal column, shakes his own hands convulsively, and, somehow or other, leading, bending, backing and siding, lands you in the dining-room or in an ante-room alongside. The other guests arise at your appearance and go through a similar but briefer performance. Before the meal tea and wine are handed around, cigarettes and pipes are offered, and if you are a devotee of the poppy a cosey bunk and handsome layout invite you to calm the soul a minute by hitting the pipe.

DINNER A LA CHINOIS.

You are seated in a massive ebony or teak chair, handsome with carving, ivory and mother-of-pearl, but a trifle too straight and angular to be comfortable. Upon a stool, partly behind and partly beside you, sits a "sing-song girl." She is an institution peculiar to the land of Confucius. She is pretty, shapely and young. Her silken robes are dazzling with color and embroidery and her face with paint and cosmetics. She is a singer, violinist and all round musician. She is also a waiter. She guards a box of cigarettes and a silver water pipe garnished with a lighted paper portfire. If during the meal you desire a whiff of the weed, a word or gesture brings a cigarette to your lips. It may please the reader to know that it is almost always an American cigarette which is used. There is no special favorite. Every brand which perfumes the air of Broadway appears on the same salver. Besides this, the "sing-song girl" must keep your plate supplied, your tea cup filled and your wine cup provided.

The table is a queer work of art. The china and porcelain are superb, so beautiful that in this land of collectors they would be placed in cabinets. There are no knives or forks. The celestial mind regards cutting and carving a labor unworthy of a guest, and relegates it to the cook. In lieu of forks are chopsticks--long, slender bars of ivory, tipped with silver or gold. The spoons are films of porcelain; the wine glasses cups like those in children's doll houses. Your plate is a saucer and your napkin a silk towel held by a servant. The table is handsome, nevertheless. It is nearly covered with dainty plates containing hors d'oeuvres piled up in slender pyramids. One pile consists of peeled bananas, cut into little drums; another of pineapple, carved into tiny bars, like miniatures of laundry soap; a third of crystallized dwarf oranges, moistened in honey; a fourth of fine onion sprouts and a fifth of preserved eggs, dark green, and suggesting sliced cucumbers. Other plates contain sliced sausage, pickled cocks' combs, hard boiled pigeon's eggs, sweet pickled shredded ginger, sliced water chestnuts, dried fish segments, dessicated prawns, smoked fish roe, and a score of other and equally incongruous dainties.

You help yourself to any of these both before and during the banquet. In the meantime the waiter or the "sing-song" girl has filled your teacup with fragrant Oolong and your wine cup with boiling wine. From this point neither cup is permitted to remain empty nor to grow old. If it stands longer than the time allotted by Mongolian etiquette, it is removed and replaced by a hot one. After a few minutes of nibbling and sipping the courses begin to arrive and continue to arrive as long as there is a soul at the board. Soups and stews, omelettes and entries, roasts and boiled, ragouts and fricassees, croquettes and vol au vents, sweet dishes and sour follow one another without apparent rhyme or reason. At the end of every half hour you take a recess of from five to fifteen minutes. Everybody lights a cigarette or puffs a water pipe. A few retire to one of the bunks and smoke a pill of opium. The "sing-song girls" perform a brief concert, vocal and instrumental, and again the meal proceeds. It is a poor dinner that has less than twenty courses. Some have forty and fifty, and a few pass the hundred mark. You eat what you please and as much as you please. Scarcely any dish is simple; some contain twenty ingredients. The average banquet uses pork, fresh, salt, and smoked; pigs' brain, liver and kidneys, chicken, duck, pigeon, quail, and goose; fish, fresh, dried, salt, and smoked; eggs of at least four kinds, rice, pastry, beans, peas, cabbage, millet, lentils, onions, garlic, leek, cucumber, squash, melon, gourd, potatoes, white and sweet; yam, ma-tai, bean sprouts, spinach, turnip, parsnip, carrot, devil fish, dragon fish, fish roe, clams, oysters, crabs, seaweed, mushrooms and tree mushrooms, bird's nests, sharks' fins, chilliss, orange peel, ginger, cocoanut, macaroni, and heaven knows what not.

Nearly every dish is wholesome and delicious. Some are so simple that you wonder they have never been adopted by our own cooks. Of these a typical example is the chicken liver ball. It is made by mincing chicken liver, mushroom, onion, a little pork, salt, pepper and cayenne, rolling this into balls the size of a small marble, dipping in egg and frying to a bright, red brown. The tiny globes are light, extremely palatable, and nutritious to the last degree.

CHINESE DAINTIES.

Large, fresh mushrooms are salted, peppered, dusted with rice flour, dipped in beaten egg and fried over a hot fire. It is practically a mushroom omelette in which each omelette is but a single bite. A third dish, which seems half familiar, is made by stewing oysters, sweetbreads, onions and mushrooms together and serving with a cream sauce.

Chow-gai-sse-men, a famous Cantonese dish, is a saute of boiled macaroni, stewed, shredded chicken; chopped onion and mushroom, with a warm aromatic sauce. Wum-tun is an Eastern form of the Italian ravioli. It is nothing more than a fine chicken consomme, in which are floating tiny meat dumplings. In one dumpling is force meat made from chicken, in another from duck, and in a third from pigeon.

The hot dishes and hot drinks produce perspiration. The moment the aqueous beads appear upon your brow an attendant hands you a silk towel wrung out from boiling water and still steaming. You mop your face, neck, hands and wrists with the scalding cloth and dry them with a second. The heat is great for a second, but is followed by a reaction which keeps the skin cool for the next quarter of an hour.

DINNER IN SWEDEN.

A good Swedish dinner is never served without what is called the "sandwich table," which precedes it. On a separate table are placed breads of several kinds, butter, cheese, fresh, smoked, and salt meats, and fish, caviare, anchovy, etc., all neatly cut and placed on little "assiettes," or a part of a dinner set used for that purpose only.

Each person helps himself, selecting with a fork and putting on his plate whatever relishes are most to his taste. Sometimes two "sandwich tables" are set, one for the ladies, one for the men, and all eat standing and chatting. Liquors are offered as appetizers. The men usually manage to clear this table before sitting down to dinner. A favorite way of serving dinner, especially when there are many guests, is to place the courses on a large table in the middle of the room and have small tables where the dinner is served. Friends have thus an opportunity of choosing their places, so that gayety commences at once, without delay or stiffness. Everybody is supposed to help himself from the centre table and servants wait on the guests.

A SWEDISH MENU

The following menu may serve for a party dinner:

Bouillon with fish sauce
or
Lenten Soup.
Mutton a la Spain.
Broiled Tomb Salmon
In Papillote.
Chestnut Pudding.
Pot gravy goose with Lettuce.
"The Countess Cakes" with Roseberry Preserve.

The bouillon is prepared in the usual way. The fish sauce is made in this way:

Take any white fish, about three pounds, remove the bones and wipe the meat perfectly clean, chop it with a pound of butter and pound it very fine in a mortar. Mix the fish with four well beaten eggs, a tablespoonful of flour, a quart of sweet cream, or more if necessary; salt and pepper; a little sugar and grated nutmeg. Drop this by the spoonful in the boiling meat juice, or bake it separately in the oven and let cool. Cut it up in small pieces and put in the bouillon.

During Lent cross buns, made in a round shape can be found in the Swedish bakery stores. These are served once a week with milk during the Lenten season instead of soup.

Lenten Soup.—Cut out the upper crusts of the buns neatly; remove them and place them one side and take out the inside of the buns and put in a dish with melted butter the grated rind of a lemon, sugar, ground cinnamon, yelks of eggs, sugar and almonds pounded together in a mortar with a few bitter almonds. Mix this well, using proportions according to taste and number of persons. This mixture, which should be moderately thick, is put into the buns and the covers again fitted on the top of each. Just before serving beat some whites of eggs with sugar and pour over the buns. Pass over it a hot iron shovel and place the buns in the oven to be warmed a few minutes. Serve in a soup plate with boiled milk, with a piece of a lemon peel, sugar and bitter almond essence (a few drops) to give it a good taste.

Mutton a la Spain.—Wash a leg of mutton in tepid water and boil. Skim carefully and put in the pot one nutmeg, two pieces of ginger, a whole teaspoonful of black peppercorns, two red onions, a few cloves and some salt. Boil these with the meat till it is done. Make a gravy as follows: Strain the liquid and skim off the fat; heat the fat with some flour, add the liquid and let boil. At the last moment add three beaten yelks of eggs. Put a few drops of lemon juice in the sauce dish before pouring in the gravy. Serve very hot. Cut the meat and place green peas around the platter.

Broiled Tomb Salmon in Papillote.—Open a fresh raw salmon as it comes from the water, cut away the backbone, wash the meat in cold water and wipe with a clean towel. Rub the inside with a tablespoonful of granulated sugar and then rub with a little fine salt. Put it in a clean earthen vessel with a few bunches of dill. Turn it every day for two or three days, keep in a cool place; after that time it is ready to eat either raw or broiled. Cut the salmon in slices and cut out as many pieces of white writing paper double the size of the slices. Spread each paper with cold butter and breadcrumbs, mixed with a little pepper and envelope each slice. Put on a broiler over a low fire; broil on both sides. Serve hot in the paper with cauliflower and asparagus.

Chestnut Pudding.—Peel the chestnuts after putting them in hot water. Boil them in water with extract of lemon and drain. When they are dry pound them in a mortar very fine. Then add half the amount of butter and sufficient sugar: the yelks of six eggs or more, according to quantity, and when the mixture is of the right consistency, add six beaten whites of eggs. Bake half an hour.

Pot Gravy Goose with Salad.—Clean and prepare a goose for roasting. Put it in an iron pot with a piece of butter till it is colored light brown. Then add a quart of sweet milk, and after a while add another quart, and so on until the goose is tender. Serve with tomatoes or lettuce.

The Countess' Cakes.—A quart of water, a quarter of a pound of butter, half a cup of sugar and the yellow rind of half a lemon. Boil this quickly and mix enough flour to make a stiff dough. When it separates from the bottom of the pan lift it off the fire and let it cool. When it is cold work in seven eggs, one at a time. Put the dough in a bag and pour the dough through a wide funnel on a floured tin in the shape of rings and bake in a slow oven. Remove the cakes neatly with a thin knife. Have wooden skewers ready, which stick into each ring. Pour some sweet oil on a piece of marble and wipe it off immediately. Boil sugar in a candy dipper. When it stands the candy test lift it off the fire and dip the upper part of the rings in it, and put on the marble to cool. When all the cakes are thus glazed remove the skewers and dip one edge of each ring in the candy, fastening them together, making a tower in any fancy shape. The sugar may be colored red, green, etc., to vary the effect. Melt the sugar again if it should harden.

Preserved Roseberries.—Pick roseberries that grow on wild rose bushes after the frost has bitten them. Clean them carefully from all seeds. Weigh them and put them in cold water. Place them in a colander, which lower in boiling water until the berries begin to crack. Take up the colander quickly and put in cold water. Blow out the water again from each berry and place them upside down on a cloth to drain. Put sugar of equal weight of the berries in a little water and clear the syrup with whites of eggs and skim. When the syrup is quite thick lay the roseberries in it and shake the kettle while the berries are boiling till they are clear and soft. Lift them off the fire and shake until cool. Put in glass jars.

A BOY'S VISIT TO THE CITY.

My name is Ralph, I'm six years old
And other boys I pity,
Who have not had a chance like me
To visit New York City.
My papa's farm is on the Plains,
Near Susquehanna river,
And we've a pony there called Babe,
I tell you it's right clever.

From Oneonta I went down,
Along with Uncle Walter.
The engine skipped right fast ahead,
It never seemed to falter.
We crossed from Jersey to New York
By Forty-second ferry,
And soon found Thirty-second street,
Where lives my Aunty Mary.

Next morning we went to the park,
And what seems very funny,
We saw a number of splendid shows
Without paying any money.
We saw the hippopotamus,
And lions, bears and monkeys,
And camels, snakes and elephants
And little boys with donkeys.

We saw the swan boats on the lake,
But steam should have its uses;
I thought the men that paddled them
Instead of swans were "gooses."
Merry-go-rounds their music played,
And swings that went up "skier,"
And I was scared, yet ladies there
Still wanted to go higher.

In one big house a thousand things
We saw around in cases,
Beasts and birds of every kind,
And owls with cat-like faces.
A whale and Indian canoe
Swung right down from the ceilings,
But seeing pins through butterflies
Did rather hurt my feelings.

On the high railway we went home,
And isn't it a pity
That miles and miles of houses kept
Me from seeing the city!
I went with Aunty to the store,
Where boys were dressed like pages
And where, instead of climbing stairs,
They pulled you up in cages.

What sights and sights of things I saw
Would take too long to mention,
But when upon the ferry boat
One thing took my attention.
'Twas dark, the lights and houses soon
Seemed all to be in motion;
My uncle smiled as he explained
The boat moves, not your notion.

—*D. W., in Oneonta Herald.*

MEDICAL.

ABSINTHE.

The centre of absinthe-making is the little frontier town of Pontarlier in the northern part of the Jura, around which, for a radius of thirty miles, both on the French and Swiss sides, the making of cheese and the growing of wormwood supply almost the sole means of support to the rural population. Elsewhere wormwood would hardly seem a promising crop, but the distilleries of Pontarlier supply a ready market for all the bitter herb that can be grown in the country side around, to be used in the preparation of the liqueur, that, popular nowadays all the world over, is by repute the most distinctly Parisian of drinks. Absinthe contains a high percentage of alcohol (75 per cent), and its intoxicating power is therefore considerable and rapid in action. Absinthe unquestionably has thereby acquired a somewhat unhappy reputation, but there are absinthes and absinthes—as the name of sherry covers a great deal, from the pure grape juice of Spain to the ingenious manufactures of the enterprising Hamburger. Wormwood and other herbs, macerated and steeped cold in the fiercest potato spirit, which effectively extracts their poisonous oils, does not naturally result in a wholesome beverage. Bad spirit and poisonous qualities combined are responsible for that rapid and maddening form of intoxication which is supposed to be typical of the habitual absinthe drinker. When it is distilled with care, and consumed in moderation, absinthe is a tonic stimulant of no mean virtue. Of wormwood a French doctor says: "Its bitterness is its principal merit. It is a tonic, stimulating, febrifuge and vermifuge. It is *par excellence* the herb of pale and feeble women."

Two kinds of absinthe, or wormwood, are used in making the liqueur at Pontarlier, the great and the small; the first for its bitter qualities, and the last, which is gathered immature, chiefly to act in giving the delicate green color. The other plants employed in the distillation are balm, carraway, anise and hyssop. Balm is classed medicinally as anti-nervous, an important antidote in a liquor considered generally as acting too forcibly on the nervous system. The quality of carraway and anise are familiar to everyone. The last is greatly used in medicine and in many other ways for its flavor and perfume. The carraway used at Pontarlier comes from the south of France, the best anise from southwestern France and Andalusia, in Spain. The flowers of hyssop are regarded as stimulating and expectorant. All the plants used in the making of absinthe, it will be seen, have recognized medical qualities.

In its natural state, absinthe has the appearance of water slightly tinctured with green, and when diluted with water, takes a cloudy opal hue of a beautiful appearance. This dilution is the great art; on its proper permanence depends entirely the success of the beverage, and the process is varied according to the theory of each drinker. Usually the water is added to the spirit drop by drop either from a bottle or by means of special apparatus. Absinthe is drunk plain with water, or mixed with sugar, or gum syrup, but it must never be drunk pure, and the best and easiest mode of preparing the beverage is as follows:

Put a tablespoonful of liqueur, Absinthe Pernod Fils, into a tumbler, and gradually twice the quantity of water; allow it to remain a few minutes, then fill up the tumbler with water; when thus prepared it will be found a pleasant appetizing and stimulating drink.

The history of absinthe is not a very ancient one. It was invented about a hundred and fifty years ago, at Couvet, a little city of Switzerland, a few miles from Pontarlier, to which place the industry was transferred about the close of the last century, since which time the popularity of the liqueur has been gradually extending. The principal distillery of Pontarlier, which dates from the year 1805, is that of Maison Pernod Fils, whose absinthe we can recommend. The liqueur is one of the most tonic and healthy which exists, as the following analysis made last year by Dr. Goodwin Clayton conclusively proves:

"From the result," he says, "of my examination and analysis I find that the Absinthe Pernod Fils is a carefully made preparation composed of pure spirit of wine entirely free from fusel oil and metallic contamination, and from other extraneous ingredients of an objectionable or injurious character; its flavor and appearance are generally unexceptionable. It is apparent from the result of my investigation that the Absinthe Pernod Fils is a liqueur of great purity and very fine quality, and that if properly mixed with water, as directed, it is a stimulant which will undoubtedly give satisfaction to consumers of this class of cordial."—*American Carbonator.*

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DANGERS FROM BICYCLING.

BY P. C. REMONDINO, M. D.

Since the bicycle has come into such general use, and clubs, leagues and conventions have elaborated its many uses, its general effect on health has been the subject of no little comment and observation. Bicycling holds about the same relation to human health that church socials and card parties, beefsteak and religion generally do to the general moral health—it is not the use but the abuse that brings one to grief, if not always to repentance. Only the other day we had a case of an accidentally acquired culture of the gonococcus of Neisser, in an otherwise exemplary and moral young man, who on being questioned as to the numerical order of the attack in question, informed us that his first case was, to his astonishment, contracted from a young lady Sunday-school teacher—he having charge of a Sunday-school class in the same church. Here, more evidently, we had a case of perverted use of Sunday schools, which, at the same time, also teaches us that the gonococcus is most decidedly unsectarian as to his habitat. So with bicycle riding; it has its uses, perverted uses and abuses.

In a late *North American Practitioner*, Prof. John A. Robison, of Chicago, quotes Cantley, who reported a case of partial rupture of one of the aortic valves in a young man of 34 years who had indulged in bicycling to excess. The young man was well developed and well nourished, but an excess of this exercise nevertheless induced this irremediable injury. Cantley particularly cautions the sedentary class—clerks and others in like occupations—who feel that they must exercise, from going to excess in this otherwise healthful pastime. Such men, confined for six days out of seven, should not attempt to crowd that amount of exercise that should be evenly divided into seven parts, all into their only recreative and recuperative day.

All such men should understand that, if overtraining breaks down the athlete, who often as a result succumbs in the hour of trial, their organism, and much more their hearts, unused to such continued strain as that consequent even on a friendly race or on a long distance ride, must inevitably suffer. In this connection Prof. Robison reports two cases from his practice of ruptured aortic valves due to excessive physical exertion—one happening in boat racing and the other in sparring—accidents to which a less athletic and physically weaker man would not subject himself.

The editor of the *Journal des Debats* lately consulted some eminent French authorities on this subject—as in France bicycling has become all absorbing. These authorities were Professor Cornil, Dr. Lagrange and Professor Bilhaut; the latter, in addition to his medical position, being also president of the Medical Velocipedic Club, which eminently fitted him to pronounce an opinion.

Prof. Cornil observed that all persons indulging in any overphysical exertion exposed themselves to two orders of derangements. Firstly, observes the professor, all excessive or exaggerated physical fatigue results in a greater increase of the beats of the heart. The heart is but a muscle, and in common with all muscles it possesses the property of being over developed by undue activity. The abuse of all fatiguing exercise therefore tends to the development of cardiac hypertrophy and of all the diseases incident to this affection. Secondly, all excessive muscular exercise will, ordinarily, engender a veritable intoxication. Our organism, under the performance of its usual functions, disengages a certain amount or quantity of the products of combustion that are really toxic in their effects, which are, however, eliminated in proportion to their natural disengagements by the secretory and excretory organs. Now, continued the professor, in the victim of over-exertion this equilibrium is uncompromisingly disturbed. The products of combustion are now far more abundant than the means for their elimination are adequate. From this cause we obtain serious and grave conditions in the economy. The fever known as the fever of over-exertion is one of these results, and in the end all the serious consequences of that condition of poisoning known as auto-intoxication or uremic poisoning may result.

In the above, Professor Cornil outlines a condition which may occur in any degree of intensity, but which even in its mild and hardly perceptible state, will, nevertheless, end in inducing a degenerative condition of the heart and kidneys.

It is by no means necessary that the fever of auto-intoxication should supervene in every case; successive mild surchargings of the blood with the toxic products of the uneliminitable effects of over-exertion will, in time, produce such degenerative changes as will either lead or pave the way to other acute, chronic and fatal diseases.

Doctor Lagrange also insisted on the existence of the fever due to auto-intoxication. He has often seen a pneumonia or an erysipelas as an immediate result of this self-poisoning. Diseases from this cause are more apt to become malignant and untreatable. Under the influence of these auto-intoxicants he has seen mild ulcers take on a septicemic action due altogether to the internal septic causes. The system is then literally laboring under a general condition of blood poisoning.

Dr. Bilhaut, himself an active velocipedist, was very emphatic in condemning the perverted use to which the wheel has fallen. "I am absolutely opposed to all races and velocipedistic exploits," said the doctor, "they prove nothing and advance nothing, but, on the contrary, these courses, races and excesses are contrary to all physiology and condemned by all of our etiological knowledge. Over-exertion has the most serious effects on the circulatory system and tends to paralyze general nutrition. The general resulting disturbance acting on the nerve centers cannot help but seriously injure the working of the whole economy as a machine."

The doctor looks upon rationally used bicycling as one of the most healthy of exercises and as excellent pulmonary gymnastics. When carried to excess he agrees fully with Cornil and Lagrange that the resulting and uneliminitable auto-intoxicants with which the system becomes loaded tend to place the economy in serious danger

Civilization has unfitted us for any such spirit of physical exercise as would not even have winded one of our old Germanic or Gaulish ancestors. Our tissues lack the requisite resistance and our organs lack adaptation. The very ease and apparent non-exertion in bicycling is its real danger. We have seen one long distance rider permanently injured—although it was some years before the results made themselves visible, and then he would not have known it but for our explanation.

ADULTERATION.

NEW TABLE OIL IN GERMANY.

On account of the great expense and difficulty in procuring pure olive oil for table purposes there have been many attempts made in Germany to produce from other substances than the olive an oil which, having all the qualities that recommend the olive oil, could be sold at a lower price.

In Southern Germany for some years past oil has been produced from the beechnut. It has given great satisfaction, but has not come into general use because the production has been small and the oil has never been pushed on the market. One reason why more has not been done in the production of this beechnut oil has been the great scarcity of the nut in certain years.

The beechnut contains but 22.77 per cent of oil but when the nuts are plentiful, the ease with which they can be gathered, the fact that there is absolutely no other expense except the pressing and the good prices that have been received for the oil, have made the production of the oil very profitable.

It is only of late that the seeds of the linden tree have been used for the production of oil. According to the report of Dr. C. Muller to the German Botanical Society, this oil has a number of excellent qualities, which would appear to make it certain that the linden seed will hereafter be considered one of the principal sources for obtaining table oil. The linden tree is a regular bearer, so that a large quantity of seed may be counted upon each autumn. The percentage of oil in the linden seed is given as 58. It is maintained that the oil has a peculiarly fine flavor—free from all bitter or aromatic taste—and that it has the appearance of olive oil. It belongs also to the oils which do not evaporate.

Oil made from linden seed will never become rancid. It has no tendency to oxygenate. It will stand a great degree of cold without freezing. Dr. Muller has exposed it to 3 deg. F. below zero without being able to notice any change.

ALFRED C. JOHNSON, Consul.

Stuttgart, Sept. 29, 1893.

"You may think you're smart," said the tragedian as the audience pelted him with late lamented hen fruit, "but I think you're making some pretty bad breaks."

INVENTIONS, SCIENCE, ETC.

THE SENSE OF SMELL IN ANIMALS.

[The Literary Digest from *Chambers' Journal.*]

Taste and smell are closely allied in man, while in the lower forms of life, especially the aquatic, the organs cannot be differentiated, though there is no doubt of the existence of the sense of smell. The organs of smell in the higher animals protect the respiratory tract. The current of air needed for respiration also conveys odoriferous particles to the nose. The nasal membrane contains the olfactory cells, from which a delicate filament passes to the surface, ending, in birds, reptiles, and other lower vertebrates, in a fine hair or group of hairs. In insects the organ of smell has not been certainly located, but it is now almost certain that it is in the feelers or antennæ. Carrier-flies deprived of these organs cannot find putrid flesh.

These slender, hair-like antennæ are organs of wonderful structure, they contain thousands of minute pits and cones—often filled with liquid—each of which forms a termination to a different nerve with its special sensory rod or hair. Wasps and bees have about twenty thousand of these pits or cones in their antennæ, so that it is possible for these organs, small as they are, to contain the nerve-terminations, not only of the organ of smell, but of hearing, and touch also. It is probably by the sense of smell that bees and ants distinguish between friends and strangers. Ants have doubtless other means of testing identity. With four hundred thousand in a nest, a stranger is at once recognized. Even when pupæ have been taken from the nest, and the ants restored, they have been recognized as belonging to the hive.

Animals sometimes show a curious fondness for scents that must be quite foreign to them in their wild state. Leopards, too, are extremely fond of perfume. The keenness of the sense of smell in animals is one of their chief means of protection. With many it gives warning of the approach of danger, while some, like the skunk, emit an offensive odor as a means of defense. Smell also forms one of the chief means by which animals recognize their friends. The organ is very large in all carniverous animals. In seals it is so large and protuberant that it almost blocks up the entry of the respiratory organs.

The vulture's olfactory nerve is five times as large as a turkey's but it is doubtful if its sense of smell is as strong as has been supposed. Mr. A. R. Wallace's experiments on this point with South American vultures showed that they could not find carrion if wrapped in paper or concealed by the grass. The sense, however, appears to be very highly developed in the apteryx which has the largest olfactory nerve of any bird probably, even finding worms underground by means of smell. Birds cannot dilate their nostrils which are in fact only minute apertures. Pelicans have no external nostrils. Scents reach their organ of smell by the palate.

The cetaceans, excepting the whalebone varieties, have no olfactory organ, and therefore no sense of smell. The external orifices in seals, water-snakes, crocodiles, etc., can be closed by means of a valve. Fish, molluscs, and crustaceans are all supposed to possess the sense of smell in greater or less degree.

The actual cause of smell is still in dispute. Prof. Ramsey has lately propounded the theory that smells are caused by molecular vibrations lower than those which give rise to heat or light. The olfactory surface to be sensitive must be moist; a moist atmosphere renders scent more perceptible.

HOW GUN-COTTON WAS DISCOVERED.

Usually important discoveries are the result of the expenditure of much skill and labor, but it is quite often the result of the merest "accident." Nearly every one, says the *Industrial World*, is familiar with Goodyear's discovery of vulcanizing rubber, also the late discovery of saccharin; but the particular object of this paragraph was a reference to the accident which led to the discovery of gun-cotton, which, according to a contemporary, from which we copy, has never before found its way into print. That paper says: "In 1846, Boettger and Schoenbein had a laboratory in Frankfort, Germany, where they also gave instructions in chemistry. They resided with their families in the building where the laboratory was located, and Mrs. Schoenbein, being a very economical lady, would 'gather in' any odd material found lying about the laboratory. It so happened one morning that a lot of oakum, used in wiping off laboratory dishes similarly to the present use of sawdust, was found by the frugal wife, who directed a domestic to wash it and spin it at night as 'recreation' after a hard day's work. This young person, by accident, fell into the embrace of Morpheus, and Mrs. Schoenbein, awakening late at night and finding the light burning, rushed into the room with a candle to see what was the matter. In bringing the flame a little too close to the oakum on the spinning-wheel a terrific explosion took place, and persons appearing on the scene found both mistress and servant in a fainting condition. Upon investigating the cause, the next morning, it occurred to Schoenbein that the oakum had been used to clean a large dish containg sulphuric acid and potassium nitrate used in illustrating an experiment. The acids had converted the impure cellulose oakum into pyroxylin."

POTASH, SODA AND MAGNESIA FROM KAINIT.

In *Le Genie Civil*, M. D. Lidersky describes the new process adopted by the Buckau Chemical Company, of Magdeburg, for producing pure potash, soda and magnesia from the kainit deposits of Stassfurth, Germany. Most of this kainit is sold as manure, and only a very little has been employed in the manufacture of potash, partly because so many useless by-products were found, and partly because it was difficult to obtain a pure potash with the Leblanc process, which was the only one employed. The new process uses up all the by-products, and besides potash it produces soda, calcined magnesia, crystallized sulphate of lime, hydrochloric acid and sulphuric acid. The average composition of the kainit used is $MgSO_4$ 16-18 per cent; K_2SO_4 22-24 per cent; NaCl 30-34 per cent. These salts are first converted uniformly into sulphate by treatment with sulphuric acid. The hydrochloric acid produced is condensed. Concentrated milk of lime is then added to the boiling solution of sulphates to decompose the magnesium sulphate. The lime dissolves, but when left at rest for some days after slow cooling, the sulphate of lime separates out as a heavy crystalline powder covered with a lighter deposit of magnesia. The solution is then removed and the magnesia and sulphate of lime washed, separated and collected in a filter press. The solution is then treated for the separation of the potassium and sodium salts. Barium sulphide is added with the resulting production of insoluble barium sulphate and solutions of the alkaline sulphides. The solution is boiled down to a strength of 20 deg. B., and subjected to the action of pure carbonic acid gas obtained from the decomposition of alkaline bicarbonates. The sulphides are decomposed; sulphureted hydrogen is evolved, and bicarbonate of soda and potash formed. The sulphureted hydrogen is burned and converted into sulphuric acid. The bicarbonate of soda is almost insoluble in the cold solution, and is separated by filteration. The potassium bicarbonate is obtained by boiling down the filtered liquid. The bicarbonates are calcined into neutral carbonates, and the carbonic acid gas driven off is employed in the decomposition of the alkaline sulphides.

WHAT IS THE OPIUM THEY SMOKE?

SMOKING OPIUM.

Opium is not considered as fit for smoking purposes until it has undergone a fermentative change which, if spontaneous, usually requires not less than ten or twelve months. The opium thus acquires a kind of bouquet more or less delicate, which is appreciated by the smoker, and in particular it has lost the rank odor and acrid taste of burnt horn which characterizes newly-made opium. Also the kneading of the paste becomes more easy, and the pipe can be smoked without further delay.

M. Lalande published in the *Archives de Medicine Naval et Coloniale* of 1891, a very complete chemical account of smoking opium, ascribing its peculiarities to fermentative changes. This led M. Calmette, of the Laboratory of Neurobiology, at Saigen, to study the subject, for if the opium could be prepared for consumption in one to two months instead of ten to twelve, the Custom House and Regies would have immediately at their command a capital of 1,500,000 francs, that being the value of the opium undergoing spontaneous fermentation.

In the vats producing the best opium he found only aspergillus and mucous, bacteria proper being entirely absent. The very best old opium he found to have perfectly pure cultures of aspergillus niger. He found it was very easy to raise cultures of this upon M. Raulin's fluid, which when transplanted to opium would germinate easily and run over all its surface, forming a wrinkled velvet crust. This fungus will complete the desired fermentation in at most a month, destroying the glucose and dextrine and changing the tannic acid into gallic acid giving it all the qualities of opium several years old.—*Boston Med. and Surg. Journal.*

PLANT AND MINERAL.

The scouring-rush (Equisetum hiemale), called *Reisig* by the Germans, is an interesting plant which has been put to practical use. In olden times its hollow, flinty stems were in great repute for kitchen-cleaning purposes. The stems are hollow and easily separated at the joints. If one would satisfy himself as to the peculiar property which first suggested the use of this rush for scouring purposes he has only to draw a joint across the edge of his teeth to find it like a file. William Hamilton Gibson shows us, moreover, in "Sharp Eyes," a way to a pretty chemical experiment with it.

If we take a small vial of nitric acid and immerse any ordinary leaf therein we shall quickly see it dissolve, literally eaten up by the acid. But waht does the scouring-rush do under such circumstances?

Immediately upon its introduction to the acid the sizzling process begins; the green pulp of the stem is gradually consumed, the tube, however, still retaining its shape, becoming paler and paler in color, until, after a few hours, our specimen is transformed into a pure white alabaster-like column, which defies any further attack from the acid.

Upon taking it from the vial and washing it carefully in running water, we hold in our hands a beautiful tube of pure, glassy flint, or silex, an object of great microscopic beauty of construction. Our scouring rush is no longer a vegetable, but a mineral, and in observing its skeleton of stone we easily understand the secret of its utility as a scouring brush.

ARTIFICIAL STONE.

SOMETHING ABOUT THE MANUFACTURE OF A USEFUL PRODUCT.

The production of artificial stone, especially for pavements, is largely on the increase. The basis of this product is crushed granite, which is incorporated with Portland cement, the water in the process being automatically gauged. After these materials are well blended, the concrete is laid in slab molds lined with zinc. When the slabs are set they are turned out of the moulds and steeped for about ten days in a solution of silicate of soda, by which process they become indurated. The silicate of soda solution is made by boiling a special kind of stone with 70 per cent caustic soda, previously made into a solution with water; the silica of the stone dissolves and the solution is diluted for use to the required strength. The slabs are taken out of the solution, scoured with water and stacked in yards where they are kept for some months before being sent away from the works.

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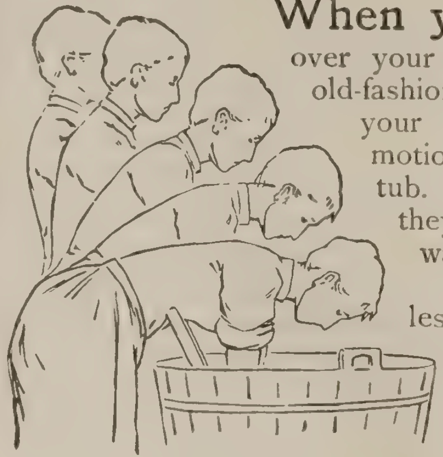
Samples will be sent free except express charges to any wishing to try this preparation. For sale by all druggists.

SCOTT & BOWNE, New York.

CONSIDER YOUR LIVERS.

Are liver complaints more common than they used to be? A contemporary, after discussing that question at some length, decides it affirmatively, and is probably right, at least with regard to city and town dwellers. In the country, where people take about as much open air exercises as their grandfathers did, and keep as good hours, with as little mental excitement or worry, bodily functions probably run along in about the old way. But the conditions of life in the centres of population are certainly not conducive to health, and the organs they most readily affect are the digestive, eliminative and excretory. Sedentary occupations, the over-heated atmosphere demanded by the enfeebled circulation of the person who is indoors almost constantly, hastily devoured food and undue stimulation of mental activity, are the great causes for the large class of disorders all connected with derangement of the functions of the liver. Subject to such influences the healthiest man alive, who is accustomed to a vigorous out-door life, and in a few days he will be suffering from costiveness, dizziness, nausea, lassitude, headache and loss of appetite. And no one ever becomes so accustomed to them that they are not productive of such effects, from time to time, in greater or less degree, and always with increasing tendency to seriousness. The primary indication of trouble is always costiveness, though comparatively few persons pay much attention to that until nature actually compels them to. But the regular action of the bowels cannot be impeded for a day without danger. Their torpidity denotes that the liver has quit work and a double burden has already been imposed upon the over-taxed kidneys. To remedy the existent evil the merely mechanical action of some saline water or other simple purgative is by no means sufficient. It may, and probably will, afford a little temporary relief, and a stimulant for the creating of a fictitious appetite, and a tonic to briefly "brace" the nervous system may so far tinker up the sufferer that he "feels pretty good." But the improvement is only for a day or two, when the trouble declares itself anew and with greater vehemence than before. It should be universally understood and accepted as axiomatic that a purgative which does not possess cathartic properties is worse than useless. To hope that the bowels may be forced, even by continuous and constantly increased doses of physic to operate when the liver is not discharging its functions, is simply absurd. The best, and, indeed, only reliable medicine to be employed in cases of costiveness, biliousness and indigestion, is one which combines power to energize the liver and stimulate the kidneys to healthful action, along with effectiveness in impelling the peristaltic motion of the bowels. These ends are unquestionably better served by Ayer's Compound Cathartic Pills than any other preparation known to pharmaceutical science. They operate surely, potently, with degrees of force which may be nicely governed by their administration; are as free from causing unpleasant sensations as any thorough medicine could be, and do not induce reactive constipation—a most important consideration and a quality rare in other purgatives. No one having a tendency to indigestion or dyspepsia should be without them.



When you're Rubbing over your washboard, in that painful, old-fashioned way, these are some of your positions. Just try these motions, up and down, without the tub. That will prove how hard they are. Then try **Pearline's** way of washing.

That will prove how needless and absurd they are. Without the washboard and the rubbing on it, and without bending over the wash-tub or bobbing up and down over it—you save the wear to your clothes and the work for your back. That's Pearline's way. Directions on every package.

Send it Back Peddlers and some unscrupulous grocers will tell you "this is as good as" or "the same as Pearline." IT'S FALSE—Pearline is never peddled, and if your grocer sends you something in place of Pearline, be honest—*send it back.* 390 JAMES PYLE, New York.

Indigestion

Horsford's Acid Phosphate

Is the most effective and agreeable remedy in existence for preventing indigestion, and relieving those diseases arising from a disordered stomach.

Dr. W. W. Gardner, Springfield, Mass., says: "I value it as an excellent preventative of indigestion, and a pleasant ascidulated drink when properly diluted with water and sweetened."

Descriptive Pamphlet free.

Rumford Chemical Works, Providence, R. I.

Beware of Substitutes and Imitations.

For Sale by all Druggists.

CHEESE AND NICKEL PLATE.

IT IS FOUND THAT THE FORMER CORRODES THE LATTER VERY QUICKLY.

A singular fact with regard to an unsuspected property of cheese which has been accidentally discovered, is interesting to chemists aside from its hygienic bearings. It appears that nickel-plated ware, which is deservedly in favor with housekeepers on account of its durability, its handsome appearance, and the ease with which it is cleaned, is attacked more energetically by cheese than even by vinegar or lactic acid. All kinds of cheese are found to produce this effect in the same degree. Even when dry any of them will eat into a nickelplated salver in less than twelve hours. Since ordinary cheese shows a decided natural reaction when treated with litmus paper, it was supposed that the trifling amount of baldrianic acid which it contains would be insufficient to account for the phenomenon. This assumption however turns out to be erroneous, for, as the result of direct experiment, it is found that the nickel is speedily corroded by baldrianic acid.

DEAFNESS CANNOT BE CURED.

By local applications, as they cannot reach the diseased portion of the ear. There is only one way to cure deafness and that is by constitutional remedies. Deafness is caused by an inflamed condition of the mucous lining of the Eustachian tube. When this tube is inflamed you have rumbling sound or imperfect hearing, and when it is entirely closed, deafness is the result, and unless the inflammation can be taken out and this tube restored to its normal condition, hearing will be destroyed forever; nine cases out of ten are caused by catarrh, which is nothing but an inflamed condition of the mucous surfaces.

We will give One Hundred Dollars for any case of deafness (caused by catarrh) that cannot be cured by Hall's Catarrh Cure. Send for circulars; free.

F. J. CHENEY & CO., Toledo, O.

☞Sold by druggists, 75c.

CHILBLAINS.—The following is a splendid liniment for chilblains: One ounce of camphor gum, four fluid ounces of olive oil. Dissolve together by a gentle heat, and apply to the afflicted parts.

MISCELLANEOUS.

ESSENCE OF LEMON.

BY ARTHUR A. BARRETT, MESSINA.

In making oil of lemon, one man takes a lemon in his hand, and with three rapid strokes with a knife cuts off nearly all the peel in three slices. The central portion which is left consists of most of the pulp with a little of the peel, top and bottom. This is simply pressed for making lemon juice. The slices pass to a second workman, who sits on a low chair with an ordinary common quality bath sponge, worth about 6d., in one hand. With the other he presses the slice of peel against the sponge, pressing the edges of the peel only with his fingers, the object being to press the convex piece of lemon peel as nearly flat as possible. One man can extract about 1½ lbs. essence of lemon per day. To insure the cells being fully charged with moisture, it is usual to allow the lemons to stand in water for a short time. After referring to the preparation of lemon peel for candying, the author said that the peel is sometimes deprived of its oil without rupturing the oil vessels, and the quantity of essence obtained in this way is considerable. It is generally assumed in England that all pure essence of lemon is good. This is far from being the case. He had seen essence of lemon containing 15 per cent of turpentine which was really superior to essence of lemon made the same day in his presence, and absolutely pure. This results from the extraordinary variation in the quality of the essence made in the various months. This difference is not noticed much in England, even the best exporters having to make an average sample, which they can supply all the year round. Turpentine is in large use, and is purified in a peculiar way. One exporter is said to use ten tons per annum. Strange to say, the worst qualities of essence all go to London, Manchester, and Glasgow. In particular English wholesale druggists have an unenviable reputation for buying low qualities. Experienced buyers claim to be able to distinguish the district and village in which an essence had been made simply by smell and inspection. Testing is carried out as follows: A sample is poured out into a tumbler and shaken up after placing the hand on top. Great attention is then paid to the duration and size of the bubbles and froth, the color is noted, and one smell is taken with the glass full and another after emptying it. Turpentine will certainly be detected in this way if over 5 per cent is present.

◆

CHEESE IN THE BIBLE.

The beginning of the cheese industry is buried in the oblivion of the past. That it is very ancient is beyond question. The first mention of it, historically, is found in the book of Job, chapter 10, verse 10: "Hast thou not * * * curdled me like cheese?" The original Hebrew word here used is gebinah, which means curdled milk, the earliest known form of cheese. The next mention of cheese in the Bible is found in I Samuel 17: 18: "Carry these ten cheeses unto the captain," the commission of Jesse to his son David, with reference to his three brothers, who were with the army under Saul. The Hebrew here has charitsehech, which means the cuttings and slicings of cheese. This shows that cheese was being made in solid form, and was not merely curdled milk.

The third and last mention of cheese in the Bible is found in II Samuel, 17: 29: "And sheep and cheese of kine for David." The insurrection of Absalom had driven David from Jerusalem, and those faithful to his cause were in danger of starvation. Among the food supply sent to the camp of David was cheese. The word here used is shaphah—cheese of kine, or cheese made from cow's milk. The use of this distinctive term is an evidence that cheese was made from the milk of animals other than cows, or it would not have been necessary to so distinguish it. It was an article of food, and, most probably, in the days of Saul, a luxury, as David was told to carry it to the captain, no doubt of the "hundred" to which his brethren belonged. The reference in II Samuel would indicate that it was a luxury enjoyed only by the rich, as the cheese mentioned was for David. Whatever may have been the character of the cheese mentioned in these three references they certainly put beyond question the great antiquity of cheese as an article of diet.

The book of Job was written 1,520 years before the beginning of the Christian era—over 3,000 years ago. That cheese was not considered deleterious to health is evident from the fact that it was not prohibited by the law of Moses, as was everything which was likely to be injurious.—*Michigan Tradesman.*

◆

Cigarette smokers are abhorred by all civilized people, and constantly being told of the vicious results of the habit. As a contribution to the argument which may be brought against the vice comes the interesting information that it has been discovered that all the cotton-wool and lint used in one of the Paris hospitals has for years been sold by the servants to the makers of cigarette papers.

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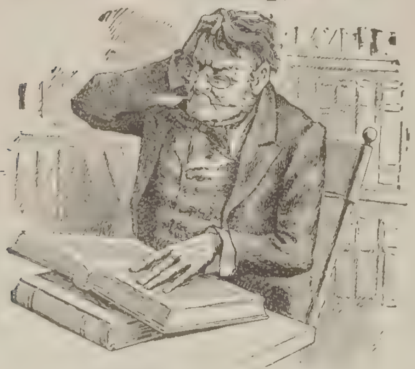

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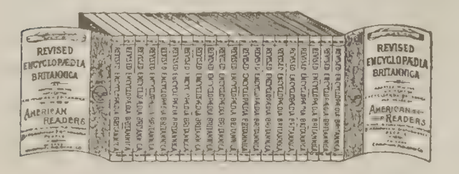
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SEVEN SCENES IN THE LIFE OF A WOMAN.

BY H. O. PICAYUNE.

A wee mother is carefully putting her favorite doll to bed. With tender solicitude she carefully removes each dainty garment and fastens on the tiny nightgown. Then, with a fond kiss she hugs her treasure to her and places it in its little cradle. After patting it gently, she tiptoes out of the room as the twilight peeps curiously in.

A fair maiden stands before her looking-glass adding the last touches to her evening toilet. Her lover will soon be here! Her eyes are full of innocent lovelight! She looks eagerly at her reflection in the glass! How glad she is that she is pretty! She frowns a little at a crimp that will not stay just as it should. A ring comes at the door and she hastens away to meet her beloved.

A young wife sits anxiously watching for her husband. At each approaching footstep her heart beats rapturously and then grows heavy with disappointment! She will not go indoors it is so sweet out there! The creeping shadows cheer her trembling soul—so she waits and wishes, and the shadows lengthen into darkened night.

A mother is rocking her baby to sleep. He looks at her gravely while they move to and fro, as if asking why the bright sunshine must leave and the ugly shadows hide her dear face from him. There is a wealth of wisdom in his great sweet eyes! He holds tightly to her dress as if to keep her near him.

When at last his eyes are closed, she disengages the loving hand, kisses him lightly—he must not be awakened—and arises to put him into his crib. Then she sinks back into her chair and begins to rock him again. It is so pleasant to rest in the twilight, and he is so sweet to nurse!

A woman kneels by a fresh-made grave. The headboard stares coldly at her and seems to say, over and over again, the words inscribed upon it: "He was her only child and she was a widow." With tear-laden eyes she bends down lower and lower, till her lips rest upon the earth. She longs so to kiss the quiet form it is hiding from her! And the twilight seems to hurry past and lose itself in the darkness.

A care-worn old woman sits watching the shadows come—they are friends to her—friends that she welcomes—for they always sing the same song to her: "One day nearer home." And she smiles to them her thanks. She, too, repeats, "One day nearer home." And so life—woman's life—goes on in the twilight, till rest comes to her weary body and joy to her aching heart—till her spirit reaches its home where never a shadow can fall upon it.

◆

PADS FOR RUBBER STAMPS.—Dietrich gives the following in his *Manual*: Boil 35 parts of Japanese (tien-tian) gelatin in 3,000 parts of water until completely dissolved. Strain while boiling hot through flannel, add 600 parts glycerin, return to the fire and evaporate down to 1,000 parts. With this liquid as a basis, make the ink of the color desired, using 60 parts of methyl violet (3B) for violet, 80 parts eosin (BBN) for red, 80 parts phenol blue for blue, 50 parts anilin green for green, and 100 parts of negrosin for black. With this ink saturate the cushion of the pad-box, and cover with mull. If at any time the surface becomes too dry, moisten with water or glycerin.

BOOK REVIEWS.

THE STANDARD DICTIONARY.

Volume I of the two-volume edition of the Funk & Wagnalls Standard Dictionary of the English language will be issued on December 16. This volume has been four years in making; two hundred and thirty-eight editors and specialists have been employed upon it; and the cash outlay has been about a half million dollars. The advance orders for the work mount up into the tens of thousands.

The Dictionary exhibit consisted of a number of proof sheets, as the work was only part in type—this fact makes the award more significant. The award of diploma and medal is the only class of awards granted. A gentleman who was present during the examination informs the publishers that the judges devoted nearly three hours to a critical inspection of the sheets (it was a very unusual thing to devote so much time to the examination of any exhibit), comparing the definitions with those of other dictionaries, and that they frequently expressed themselves as highly pleased and in favor of the features of the Standard. At the close of the examination, one of the judges remarked: "I have the best of other dictionaries, but this work has desirable features that others have not. I must possess a copy when it is published."

The vocabulary of the Standard is extraordinarily rich and full, that of no other dictionary nearly equalling it, although great care was taken to throw out all useless words.

The following is an actual count of words and phrases recorded under the letter A:

Stormonth Dictionary, total terms in A....	4,692
Worcester Dictionary, total terms in A....	6,893
Webster (International) Dictionary, total terms in A..............	8,358
Century Dictionary, total terms in A.......	15,641
The Standard Dictionary, total terms in A	19,736

The full number of words and terms in these dictionaries for the entire alphabet is as follows: Stormonth, 50,000; Worcester, 105,000; Webster (International), 125,000; Century (six volumes, complete), 225,000; Standard, 300,000.

"Commend Me

to Your Honorable Wife"
—*Merchant of Venice.*

and tell her that I am composed of clarified cottonseed oil and refined beef suet; that I am the purest of all cooking fats; that my name is

Cottolene

that I am better than lard, and more useful than butter; that I am equal in shortening to twice the quantity of either, and make food much easier of digestion. I am to be found everywhere in 3 and 5 pound pails, but am Made only by

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PICKING OUT A CHEESE.

The woman who knows how to buy a cheese is a rarity. But here is a chance for the rank and file to improve if they will only adopt the following sound advice offered by a competent authority:

A cheese with an indication of goodness will stand square on the shelf and will have an even-colored, not mottled rind. The moment you press your finger tips on the rind you can begin to judge of the interior make up of a cheese. If it yields readily to the pressure of the fingers, and the rind breaks or does not spring back readily when the pressure is withdrawn, you have struck a soft article, caused by the slack cooling of the curd, a want of acid, or both. At best it will have an insipid flavor, and will go off as it ages. Cheese which feels so hard that you cannot press it on the rind, is either sour, salted too heavily, cooked too much, skimmed, or suffering from a touch of all these complaints. A good cheese will be mellow to the touch, yet firm; its rind will be of an even tint, elastic and free from puffs; and the sample will reveal firm, close-grained, buttery cheese of a nutty flavor.—*Ex.*

◆

CUTS.—For a cut, take powdered resin, pound it very fine, and spread or sift it over the cut; wrap a piece of soft linen around it, and wet in cold water quite often. This will prevent inflammation and soreness.

THE QUARTERLY ILLUSTRATOR.

The *Quarterly Illustrator* inaugurates with the current number the second year of its successful existence. It has made an army of friends for itself during the past twelve months, and seems to be a welcome visitor wherever taste and culture reigns. The most flattering commendations have been accorded it by artists, publishers, the general public, and the press throughout the country. It has scored a great success in illustrated journalism, and stands to-day among the leading pictorial periodicals of the land.

BUSINESS NOTES.

COUGHERS TO THE FRONT.

"Take time by the forelock" ere that rasping hacky cough of yours carries you where so many consumptives have preceded you. Lose no time, but procure a bottle of the rational remedy for lung and bronchial disease—Scott's Emulsion of Cod Liver Oil with Hypophosphites of Lime and Soda. Rely upon it that it will afford you speedy and efficient aid. Not only is it a pulmonic of surpassing merit, but it compensates for the drain of vitality which is a most formidable accompaniment of lung disorders. Besides arresting the progress of consumption, bronchitis and asthma, it infuses unwonted vigor into an enfeebled system and tends to fill out the hollow places in an angular frame.

Ladies in delicate health will find it a palatable means of adding roundness to a figure robbed of its contour by the inroad of marasmus or other wasting disorders. A scrofulous tendency may be successfully combatted with it and it is a capital thing for feeble children.

◆

THE CRYSTAL MAZE.

One of the most interesting and amusing lessons in optics and reflections is to be found in the Crystal Maze, at Broadway and Thirty-eighth street, New York.

By a scientific arrangement of mirrors placed at angles calculated to the fraction of an inch, effects in reflection are produced which would have been deemed impossible. One reflection is again reflected, and so on to infinitum, until like specters the lost image disappears in the mist of the distance.

In one instance a person sees himself approaching himself from every point of the compass, all the images conveying to a common centre. Then again without a guide the observer will find himself in a cul-de-sac of mirrors, from which there seems no possible escape and he will be as completely lost as if he were in the Dismal Swamp.

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◆

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which is issued annually by the Pope Manufacturing Company, of Columbia bicycle fame, is out for 1894, much improved in appearance. It is a pad calendar of the same size and shape as those of previous years, having a leaf for each day, but its attractiveness has been heightened by the work of a clever artist, who has scattered a series of bright pen-drawings through its pages. It also contains, as usual, many appropriate and interesting contributions from people both bright and wise.

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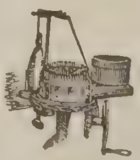

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STICK TO BRANDS.

While investigating some serious complaints about the quality of groceries purchased in the grocery department of one of our so-called department stores, we were forcibly struck with some peculiarities in the manner in which this business is conducted. Of course, the reputation of one of these department stores for fair dealing and honest goods, may be just as good as that of the most reputable grocer or spice miller, yet it is a fair presumption that the reputation of one of these department stores for selling cheaper than any other store must be kept up at all hazards. Again, these stores dealing in so many diversified articles cannot from the very nature of the business, be expected to have as thorough a knowledge of the quality of goods as a man who deals in one line of goods only. But even if this were all equal, we still make the objection to these stores on the general ground that they do not sell any goods that they can possibly avoid selling, under the manufacturer's brand, but so far as they possibly can have the goods packed and labeled under their own trade mark and name. As said before, these people may be just as reliable and take as much pride in maintaining their reputation for pure goods as any individual manufacturer, yet we maintain that the consumer will find himself better served by purchasing the standard brands of goods put up by reputable manufacturers who have a vital interest in building up and maintaining a reputation for pure, unadulterated goods, and will find that it is cheaper in the end and much more conducive to the health and comfort of the consumer to pay a trifle more, if necessary, for a well known brand than to buy an inferior article or one about the quality of which there is any doubt on the brand of a department store. In another article in this issue we have already spoken of one evil practice peculiar to these large stores, that of substitution or selling an inferior article in place of an article with a special brand, telling the purchaser that they are just as good or better and all this because there is a larger profit in the substituted article.

To illustrate this still better, we will take up the grocery price list of one of these houses, which starts in with the bold but alluring statement that "economic housewives can save from 25 to 40 per cent by purchasing their groceries of us." The list starts off with teas and coffees, of course no one can judge of the quality of these by the price list, so we will pass over these. Next comes syrup and honey. No brands are given but it is fair to presume that the average honey and syrup packer will not put up a better or purer grade of goods than he sells under his own name and trade mark. If the majority of these men, as shown by the official government report, will barefacedly sell glucose and hickory bark for maple syrup, and glucose with cheap sugar syrup flavored with honey as pure honey, what can be expected of the bottled goods they sell to these stores? The next line of goods that attract our attention is Dundee Oats and Irish oatmeal, a description that might apply to oats raised at Dundee, New Jersey, as well as to those from Dundee, Scotland. If there were a brand affixed every one would be able to judge whether they are cheap or dear; as it is the buyer is entirely at the mercy of the storekeepers. In the list of spices there is not an indication as to who ground these or whether they are made of cracker and brick dust or of the spices they pretend to be; the same thing applies to farinaceous goods with only one exception, that of Imperial Granum, also to flour especially the selfraising kinds; every one knows Hecker's preparation but if these were Hecker's it certainly would be mentioned, it is therefore fair to presume that they come from some concern without reputation because they are cheaper than any standard goods could be. Passing over several items, we find macaroni, spaghetti, vermicelli and Italian paste without designating whether imported or domestic, surely an important factor. In the line of flavoring extracts we are taught an object lesson. This is one of the very few exceptions in the list and points a strong moral. Prices are quoted for Joseph Burnett & Co.'s and American Extract Company's extracts and for the same size bottles we find 21 cents quoted for the former and only 13 cents for the latter; the explanation is simple, the former is a well known old Boston house who never use anything but the purest and best goods while the latter house is unknown and as to the quality of their goods, a guess is easy. This proves our assertion, that if these goods were sold by brands every one could readily judge, as in the instance of flavoring extracts. Mustard is another glaring instance of selling goods without brands. One pound cans are quoted at 25 cents. Is this barrel mustard worth 5 cents a pound and composed of buckwheat middlings, colored with arsenical yellow and flavored with capsicum or what sort of mixture is it? Mustard mixtures are, at best, but reproductions of the elasticity of the manufacturer's conscience. If you want pure mustard you must buy a brand known to be pure and pay the price of pure mustard for it. In the line of olive oils we are again met with the same old vagueness—Virgin French, and Lucca Italian are enumerated. Under these titles there can be bought the very finest and most expensive oil that comes to this market, and as well, the vilest concoctions of South Fifth avenue, or of some back cellar in the slums. Whose brand is it? There are some brands in this market well known for their purity and constant equality of excellence, but there are many more equally well known for their vileness and the total absence of any product of the olive. But let this suffice. Our advice to our readers is as it has always been: Buy only well known brands and avoid all other goods.

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A PECULIAR GUARANTEE.

Several readers have sent to us samples of a new Breakfast Cocoa put on the market by Hawley & Hoops of New York, saying that they had been induced to buy it at two of our large department stores by the salesmen claiming that they were just out of all other brands, although the other brands were largely advertised in their catalogues and that this brand of Hawley & Hoops was just as good, if not better, than the others and much cheaper. Several of these correspondents complained that the cocoa of Hawley & Hoops had a peculiar odor which was unpleasant and that the color and taste were entirely different from the cocoas they had formerly bought. Accordingly we purchased a can or two of this much vaunted cocoa. Upon opening the same, we found the peculiar odor complained of. It certainly was not pleasant. Upon preparing a cup of the cocoa according to directions we found the same unpleasant odor; the cocoa was almost tasteless. Trying another cup made according to the same directions, but adding six times the quantity of cocoa stated in the directions, we obtained a taste but it was decidedly unpleasant and totally different from any other cocoa we had ever seen, smelled or tasted. We did not care to taste any more. Our experience with it will last us for a while. We turned it over to our laboratory for analysis and when the report is ready we will publish it, as it will probably explain the causes of the bad smell and taste. Attached to the can was a circular in which was contained a so-called guarantee: "That this A No. 1 Breakfast Cocoa is made exclusively from cocoa beans and contains no other ingredients and that it is made without the use of chemicals." The last part of this guarantee will be readily recognized as not original, but the phrase "made exclusively from cocoa beans" is what struck us as very comical. It reminded us forcibly of the Irishman's retort to the whiskey man who guaranteed that there was no adulteration in his whisky. "I believe you" said Pat, "it is not what you put in, I complain of, it is what you did'nt take out." Therein lies the application of the joke. A man may easily guarantee that he makes his cocoa exclusively from cocoa beans, but the question arises from what grade and quality of cocoa beans did he make it and did he remove the bad, indigestible and unwholesome matters contained therein as should be done, even if these matters that should be eliminated make weight? Evidently, some such thoughts must have arisen in the minds of these manufacturers, for they attempt to forestall any suspicion in the minds of the purchaser by putting in the next sentence of their circular that they "are sometimes asked how our cocoa can be sold any cheaper than other first-class brands which it fully equals or excels," and answer, evidently to their own satisfaction, by the trite old saying that they are satisfied with a very small margin of profit, that they do not have to add to cost a large sum for advertising, etc. As to margin of profit, no man does business for fun, all want to make a profit, but does this *small* profit come from selling a really meritorious article at a low price, or is the small apparent profit really an enormous profit by selling a cheap, inferior article on the basis of what would be a very small profit on a good article? The item of saving on advertising is too ludicrous to be seriously considered. Every business man knows that all large houses pay for their advertising out of a small share of the profits and that such advertising really enables the enterprising, brainy manufacturer to sell his goods cheaper and by the greatly increased volume of business really make greater profits without in any way charging the cost of advertising to the cost of his goods. A manufacturer might as well claim that because he pays but ten dollars a month rent for a 6x9 shop he can sell goods cheaper than his competitor who pays $1,000 a month for a whole building. It is the volume that reduces relative expenses, and not the mere comparison between cost and price. In another circular addressed to physicians of which several copies have been sent to us, the claim is made that this cocoa is equal to any foreign or domestic cocoa and that "it is free from oil or cocoa butter." This needs no reply. With these plain statements of facts, which will probably answer all the questions we have been asked, we let the matter rest until our laboratory report is ready.

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NOT BRIBED.—Citizen—People are saying that you were bribed to put through that thieving bill in behalf of the Graball Company.

Legislator (haughtily)—Huh! Who would there be to bribe me, I should like to know? No one, sir. Not a living soul.

Citizen—But that company—

Legislator—Why, I'm the company.

HOUSEHOLD.

TESTED RECEIPTS.

Every receipt here given is original, has been practically tested by the AMERICAN ANALYST and is therefore confidently recommended.

POMPTON PUFFS.

Sift three cups flour, one heaping teaspoonful baking powder, one half-teaspoonful salt together twice. Chop in one tablespoonful butter. Stir the beaten yelks of four eggs into two cups milk, and add the three ingredients, then the whites of four eggs that have been beaten stiff. Whip high and light, and bake in cups in a quick oven.

RICE MUFFINS.

One cup boiled rice, one cup sweet milk, two eggs, two tablespoonfuls melted butter, one teaspoonful sugar, two of baking powder and enough flour to make a batter; beat hard, and add the baking powder the last thing. Bake in muffin rings.

ROAST CALF'S LIVER.

Wash thoroughly and wipe dry, cut a long deep hole in the side, stuff with bread crumbs, bacon and onion chopped fine, salt, pepper, and bits of butter, and one well-beaten egg. Sew or tie together. Lard it over, and bake. Serve with gravy and currant jelly.

OYSTER DRESSING FOR TURKEY.

One pound bread, crumbled fine, add two stalks celery chopped fine, one-half pound melted butter; salt and pepper to taste. Add to this two quarts oysters, strained from their liquor, carefully looked over to avoid bits of shells. When oysters are mixed with bread, add enough of their liquor to moisten stuffing well. Fill the turkey, and baste with equal parts of liquor of oysters and water.

BANANA FRITTERS.

Beat three or four bananas to a cream with a good whip. Add one egg, one cupful bread flour in which one level teaspoonful of baking powder has been sifted; one saltspoonful salt, about one-fourth cupful of sweet milk or enough to make a drop batter. One teaspoonful sugar and one teaspoonful of lemon juice may also be added. Beat until thoroughly mixed. Fry the same as doughnuts.

FRUIT COOKIES.

Two cups sugar, two-thirds cup of butter, one cup chopped raisins, one-half cup water, one egg, three teaspoonfuls baking powder, Flavor with cloves, cinnamon, and nutmeg. Cream the butter and sugar, add the other ingredients and flour enough to render stiff enough to roll out. Bake in a quick oven.

RENOVATING BLACK LACE.

Black laces sometimes require renovating, and this, while a very important task, is not understood by many. Washing in the usual manner is out of the question with these, and some other process must be adopted. One which answers very well is to take a teaspoonful each of ammonia and turpentine, and add them to a cupful of hot water; a little more or less strength is immaterial. With a piece of black cotton or black silk sponge off the lace, and press it between folds of some dark cotton or silk. The freshening thus accomplished is quite gratifying, and the task is by no means a difficult or unpleasant one. It should be borne in mind that no sponge or light-colored cloths are to be used in applying the medicament, otherwise the whole may be irreparably injured.—*Good Housekeeping.*

CLEANSING BLANKETS.

There are numerous variations in the method employed for the cleansing of blankets, the first to be described being by the use of ammonia. When the blankets are ready for washing, pour into the bottom of the dry tub half a pint of the usual household ammonia water, and over it lay the blanket lightly. Then immediately pour over sufficient warm water to entirely cover the article. This sends the fumes of the ammonia through the fibres of the blanket, and loosens the dirt in a wonderful manner. The cloth should be pressed and stirred about in the liquid for a time, then removed to another tub containing simply warm water, of about the same temperature as that first employed, and again soused about for a time; after which it is to be lightly run through a wringer and directly hung to dry. The same method of treatment is to be pursued with each blanket, and the suds is not to be used a second time. Probably this is one of the most economical methods which can be employed, and the least taxing to the physical strength. Unless the blanket is very dirty, this treatment will give a perfectly satisfactory result. If there are spots, a gentle rubbing between the hands will usually free them from dirt.—*Good Housekeeping.*

TO REVIVE CARPETS.

Strew fresh-cut grass over the carpet, and let it remain a few minutes before sweeping, which should be done with a tolerably stiff broom. This is much preferable to the use of tea leaves, which frequently leave stains. Fresh grass prevents dust from arising, and imparts to the carpet a peculiarly bright, fresh appearance. Or, sweep the carpet clean; procure of a butcher an ox gall, mix into a pail of rain water, and scrub the carpet with it. This will remove stains.

HYGIENIC.

TEARS ARE USEFUL, TOO.

RELIEF FOR THE NERVOUS SYSTEM OF ITS MANY STRAINS—OTHER USES.

This subject is considered in a bright and interesting paper recently published in the *Asclepiad.* Fear, grief and joy, to say nothing of pathos and anger, bring tears to the eyes. They are said to come from the heart, and this is true, for no one ever reasoned himself into weeping without a first appeal through the imagination to some emotion. Tears are the natural outlet of emotional tension.

They are the result of a storm in the central nervous system, giving rise to changes in the vascular terminals of the tear-secreting glands. These changes induce profuse excretion of water, and weeping results. In a mild degree some excretion is always in process, to bathe the eye and clear it of foreign matters. The controlling centre is at a distance, though the secretion may be kept up by the small trace of saline substance that is present in the tears themselves. The lachrymal glands lie between the nervous centre and the mucous surface of the eyeball.

Tears afford a good illustration of the way in which nervous fibres are capable of conveying to a secreting organ exciting impulses from both sides of a gland lying in their course. Afferent and efferent communications bring about a similar result. Internal nervous vibrations and external excitation or reflex action causes a flow of tears. In both instances the exciting impulse is a vibration. Niobe, all tears, and the unfortunate pedestrian with a minute particle of steel from the rail of an elevated road in his eye, are unwilling exponents of a similar process. They weep the same kind of briny fluid in exactly the same way, though from widely different causes.

Imagination is at times sufficient to excite the nervous system into the production of tears without external aid or reflex. Writers and readers of good fiction weep over it alike, and the actor loses himself so entirely in the exigencies of dramatic art that he sheds real tears and the audience shed tears with him. Of a truth, the man who never weeps has a hard heart, and the quality of his intellect may also be questioned.

Emotion, then affection, grief, anxiety, incite to tears, not pain or discomfort. The pangs of maternity are tearless, though the influence of ether or chloroform may cause some emotional dream that results in weeping. In the earlier days of surgery patients might scream and utter such pitiful cries as to sicken the bystanders, might even faint with pain, yet there were seldom any tears. These, being pure waves of emotion and a relief to the heart, are almost powerless to mitigate pain. Perhaps one who weeps from pain does so from unconscious though selfish pity—in other words, from emotion.

For the tearful, change of scene, mental diversion and outdoor life are the best remedies. The author quoted objects to alcohol as fearfully injurious. It disturbs and unbalances the nervous system, keeps up a maudlin and pitiful sentimentality, and sustains the evil. Alcohol is the mother of sorrow. An opiate, however, prescribed at night, soothes and controls and really disciplines bilious nerve centres. Sleep cures tears.

And so does time, the restorer. Persons subjected to many and repeated griefs forget how to weep, and the old as compared to the young are almost tearless. Tears have their value in the life of humanity, not as tears, but as signs. They show that grief centres are being relieved of their sensibility, and that the nervous organization is learning how to bear up against sorrow.

MEDICAL.

HICCOUGH.

Hiccough in most cases is a very trifling trouble, which generally yields readily to any one of the many simple expedients, but in rare instances it proves intractable. A little sugar water quickly overcomes it in babies, while a few swallows of water usually do the same for adults.

Persistent hiccough which stoutly resists treatment occurs only among the latter, and generally late in the course of fatal chronic diseases in which the stomach or liver is involved. In such cases subcutaneous injections of medicines and galvanism are among the remedies generally employed. A very simple remedy, worth recording, has recently proved effectual after all the ordinary measures were resorted to without avail. It was merely a teaspoonful of pulverized sugar wet with the same quantity of vinegar. This was taken at one dose, and immediately stopped the hiccough, which did not return for six hours, and then ceased after a second dose of the same remedy.

YAWNING IN THROAT COMPLAINTS.

Let us suppose that one of my readers were to suffer from sore throat, or buzzing in the ears with deafness, and we were to consult a physician about the proper treatment to be followed. What would be thought of the physician if he were to recommend a series of successive yawnings, to be repeated several times a day? The physician would certainly be considered a fool, and in all probability his advice would not be asked on such a subject a second time. Yet this is the advice given by M. Naegeli, of Ermatingen, and the results he obtains are quite remarkable, according to reports.

The painful symptoms are relieved almost at once, and the pharyngitis itself may be stopped short if the treatment is begun early enough. This is, therefore, a case to say that it does not do to be astonished at anything, especially as the physiology of yawning explains perfectly the recoveries that have been reported.

It is well known that yawning may be readily produced by auto-suggestion, suggestion or imitation; there is, therefore, nothing to prevent our making use of its therapeutical action, the mechanism of which it is easy to understand. During the act of yawning there is considerable stretching of the muscles of the pharynx and soft palate, which are in this way put through a sort of massage; besides this, the cartilaginous portion of the eustachian tubes is made to contract and drives into the pharynx the mucus that has accumulated.

Dr. Naegeli claims that yawning is more efficacious in freeing the tube from accumulated secretions than any of the other processes in which the mucus is often driven toward the middle ear instead of toward the pharynx, as is the case in the act of yawning.

The process is within the reach of everybody, so that each person can give it a trial and form an individual opinion of its value.

FIVE RECIPES FOR CHAPPED HANDS.

1. Mix one part of tannic acid, 500 parts glycerine, 5,000 parts rose water.
2. An excellent ointment consists of one and a half ounces of lanolin, half a dram of olive oil, thirty grains of salol, fifteen grains of menthol.
3. For hands or lips: Dissolve boric acid, one part, in glycerine twenty-four parts; add lanolin, five parts, free from water, and vaseline seventy parts. The mixture may be colored and perfumed.
4. Whenever taking the hands out of water, wipe dry, while yet damp, rub well with corn meal or clear starch powdered.
5. Take common starch and grind it with a knife until it is reduced to the smoothest powder; put it in a clean tin box, so as to have it continually at hand for use. Then, every time that the hands are taken from the suds or dish water, rinse them thoroughly in clear water; wipe them; and, while they are yet damp, rub a pinch of the starch thoroughly over them, covering the whole surface. The effect is magical. The rough, smarting skin is cooled, soothed and healed, bringing and insuring the greatest degree of comfort from this by no means insignificant annoyance.

TO REMOVE A CINDER.

Dr. R. W. St. Clair of Fort Wayne, Ind., tells how, a few years since, he was riding on an engine and caught a cinder in his eye that caused the most excruciating pain. He says that he naturally began to rub the afflicted organ, when the engineer called out: "Let that eye alone and rub the other one." The doctor looked incredulously at his adviser, but the latter only continued: "I know you doctors think you know it all, but if you will let that eye alone and rub the other one the cinder will be out in two minutes." The doctor says that he began to rub the well eye vigorously and soon felt the cinder move down to the inner corner. He was preparing to take it out by the aid of a small mirror when the engineer again admonished him to "keep rubbing the well eye," which he did for a minute longer, and then found that the cinder had slipped down onto his cheek. Who can give a sensible explanation of this odd proceeding?—*St. Louis Republic.*

ADULTERATION.

POISONOUS SUBSTANCES IN MEAT.

One of the greatest objections, and one which is being recognized by scientific men, to the use of cheese, flesh meats, and all decomposing foods is that they contain poisonous substances which are the result of organic activity, as in meat, and of poisons closely allied in other cases. During life a perfectly healthy animal is constantly eliminating waste matter through its five great excretory organs and its life depends upon their activity. When an animal is slaughtered, the eliminative processes cease at once, but the accumulation of poisons does not cease, that is, molecular activity continues until *rigor mortis* sets in. You may have seen the muscles of an animal quivering while it was being cut up. While at Key West, I went into a turtle market and saw turtle steaks squirming around on trays, while the heart of the turtle was lying upon the counter beating away, although it had been dead some hours. In fact the heart continued to show signs of life for twenty-four hours.

To show the importance of the proper activity of the eliminative organs in destroying this organic waste, we have but to remember that a warm-blooded animal dies in about a day and a half if the liver is removed; in about a day if the kidneys are removed, and if the skin is totally obstructed the animal dies in a few hours. An animal cannot survive if covered with varnish, because certain poisons which are naturally thrown off through the pores of the skin are thus retained, and self-poisoning results. A little of this poison injected into an animal paralyzes the heat-making centres and causes death. A warm-blooded animal when submerged in water dies, not from the water, but because the avenues through which organic poisons are naturally thrown off are obstructed by it, particularly the lungs through which the most deadly poisons of the body are eliminated.

Now as animal life depends upon the activity of its eliminative organs, when the heart, the great engine of the body, ceases working, eliminative processes cease, but, as before stated, the process of accumulation of waste matter does not cease until *rigor mortis* sets in. After an animal has been dead half an hour there is probably ten times as much poison in his body as there was before its death. So, under the best conditions in which flesh food can be eaten, it contains a large amount of organic poisonous accumulations. People have been accustomed to the use of meat so long that it is hard to make them realize what a gross food it really is, as demonstrated by scientific facts.

Carnivorous animals will eat live animals, but a lion, for instance, will not eat a dear after it has been dead a week; yet a man will eat a deer after it has been dead three weeks, and even longer—some prefer to have their game very "high," which, in plain English, means that they like it best after putrefaction has well advanced. When meat is allowed to become "high," whereby the strong flavor of decomposition is imparted to it, it contains not only the natural poisons produced by the tissues, but great quantities of other poisons which are called ptomaines, produced by the action of the germs which set up the process of decomposition.

Exercise is necessary to eliminate the poisons of our own bodies, and the man who eats meat should take a double amount of exercise in order to eliminate the extra poisons which he has taken into his system. But the question is asked, does not cooking destroy these germs? No, ordinarily it will not do this, for the only way it can be done is to reduce the flesh to a solution. Beef is sometimes cut up and the juice extracted in the form of "beef tea," an extract popularly supposed to be very nourishing, yet it consists almost exclusively of these poisons which we have been talking about—it is really the most unwholesome part of the meat.—*Food, Home and Garden.*

DIFFERENTIATING PURE FROM ADULTERATED LARD.

DR. TAYLOR'S SCHEME.

In his annual report to the Department of Agriculture, Dr. Thomas Taylor, chief of the microscopical division, gives the following scheme for differentiating natural lard from the factitious products now flooding the market: 1. Heat, over the flame of a Bunsen burner, in a porcelain capsule, 4 ounces of pure, home-rendered leaf lard for a period of one minute, and allow it to cool slowly until it solidifies, which will require a period of about four hours in an atmosphere of about 75 deg. F. The crystalline groupings of this sample will appear very small when viewed under a power of 100 diameters. 2. Prepare, in like manner, another sample of pure leaf lard, heating it for a period of four minutes, and allowing it to cool slowly, as above. It will be observed that pure lard in this case shows well-defined crystals of stearin, viewed under the microscope as above, and will, without regard to the high temperatures to which it has been exposed, consolidate in about the same time as that given in the first experiment. 3. Prepare a sample of compound lard, consisting of commercial stearin and sufficient cotton-seed oil to bring the stearin to the consistency of good, pure lard; heat four minutes, and allow this mixture to cool slowly, as above. It will consolidate in about an hour at 75 deg. F. 4. Prepare a second sample of compound lard, consisting principally of commercial stearin, to which a trace of pure lard has been added; heat this compound for a period of four minutes. This compound will also consolidate quickly, owing to the presence of stearin in large quantity. 5. Prepare a third sample of compound lard, consisting of commercial stearin, oleo, and cotton-seed oil, with a trace of pure lard; heat four minutes, and allow it to cool slowly at 75 deg. F. In this case it will be observed that the time required for consolidation will depend upon the amount of stearin present. 6. Prepare a sample of commercial oleo after the method of the first experiment. This, like pure lard, will require about four hours at 75 deg. F. to consolidate. 7. Prepare a sample of commercial stearin, heating it four minutes. This will consolidate in about half an hour or less, at the temperature given above.

THE WRONG CHAIR.—Uncle Treetop (on his way to dentist's office)—Most likely it'll stop aching by the time I get in the chair. If it does, I swan I'll pretend I've made a mistake and tell him I want a hair cut.

INVENTIONS, SCIENCE, ETC.

THE MUSICAL PHONOGRAPH.

HOW THE NICKEL THAT YOU DROP IN THE SLOT IS EARNED.

It may have occurred to some who, by inserting the end piece of two little rubber tubes in their ears, heard reproductions of stage songs by prima donnas, stirring marches and thrilling martial music by famous orchestras or bands, to reflect that the little machine in the corner of the station waiting-room, which ground out this surprising result, was getting something for nothing, and that somebody who owned it, and "who toiled not, neither spun," was reaping a harvest in nickels.

It may be interesting to know how the phonographic "blanks," as the little wax cylinders used upon the Edison phonograph for recording and reproducing speech are technically known, are charged with these choice selections of classic music for the public who have nickels to drop in the slot. The process is first to place the singers or instruments as closely to the large speaking horn of the phonograph as possible in a room from which all other sound is carefully excluded. If there is more than one singer or instrument they are grouped in a semi-circle. Four or five, sometimes as many as seven phonographs, are arranged also in a semi-circle. The sounds are recorded on all simultaneously, but not with equal perfection, some of the cylinders being better than others. By this process, if a large number of cylinders are needed to supply all the phonographs controlled by the company, the music is simply repeated as many times as is necessary. After testing, the cylinders are then ready to be placed upon the phonographs at the railway stations, seaside resorts and other public places, where the curious audience of one drops a nickel in the slot and then smiles to himself and wonders why every one else doesn't smile in enjoyment of the feast of song. A much more rapid process is used by Mr. Edison in his works. What is called a "master record" is made upon a single cylinder, which is used similarly to the matrix in the stereotyping process for reproducing or multiplying the cylinders as many times as may be desired.

HOW THE SHOT-TOWER WAS INVENTED.

Before Watts had his dream, the making of shot was a slow, laborious, and consequently costly process. Watts had to take great bars of lead and pound them into sheets of a thickness nearly equal to the diameter of the shots he desired to make. He then had to cut these sheets into little cubes, place the cubes in a revolving barrel and roll the barrel around until by the constant friction the edges wore off from the little cubes and they became spheroids.

Watts had often racked his brain trying to discover some better and less costly scheme, but in vain. Finally, after spending an evening with some boon companions at the ale house, he went home and went to bed. He soon fell into a profound slumber, but the stimulants he had imbibed apparently disagreed with him, for his sleep was disturbed by unwelcome dreams. He imagined he was out again with the "boys," and that as they were stumbling homeward in the dark, it began to rain shot. Beautiful globules of lead, polished and shining, fell in a torrent, and compelled him and his bibulous companions to drag their heavy limbs to a place of shelter.

In the morning when Watts arose he remembered his dream. He turned it over in his mind all day, and wondered what shape molten lead would assume in falling through the air. These thoughts tormented him so persistently that at last, to set his mind at rest, he carried a ladleful of molten lead to the top of the steeple of the church of St. Mary at Redcliffe, and dropped it into a moat below. Descending, he took from the bottom of the shallow pool several handfuls of the most perfect shot he had ever seen. Watts' fortune was made, for he had conceived the idea of the shot-tower, which ever since has been the only means employed in the manufacture of the little missiles so important in war and sport.—*National Druggist*,

MENTAL ARITHMETIC.

A MEMORY FOR FIGURES.

A man who presents an extraordinary example of the extreme development of a partial, special, or, as it has sometimes been called, local memory has recently been reported upon by a special commission of the Académie des Sciences. The case unfortunately, does not throw any light upon the mode of origin of such memories, since the facts that can be ascertained as to the ancestors or near relatives of the subject do not afford any evidence of the operation of a hereditary tendency, but the examination has yielded some results of great interest.

Jacques Inaudi, the son of Piedmontese peasants, was born in 1867, and did not learn to read and write until twenty years of age. Yet when only twelve years old he was already a calculating wonder and was presented to the Sociéte d'Anthropologie by Broca, who in his report wrote: "He can not read nor write; he has the numbers in his head but can not write them." He learned the numbers from his brother by repeating them after him, and has worked out for himself methods of resolving arithmetical problems which are original with him, and differ in certain points from those in ordinary use. Thus, in addition, he can add together six numbers of four or five figures each; he achieves this by adding together the first two, then the sum of these and the third number, and so on to the end; but in each case he begins from the left, as is stated to be the practice of the Hindoos. In subtraction he accomplishes the extraordinary task of subtracting numbers containing twenty figures, beginning here also from the left. This feat is a striking proof of his wonderful memory for numbers, and his method of multiplication depends entirely on the same faculty. Thus, he multiplies 834x26 by the following process: 800x30=24,000, 800x6=4,800, 30x36=1,080, 4x36=144, which gives by addition the true total, 30,024. Division he accomplishes in the same way as an arithmometer, by successive subtractions. In finding a square root, however, he adopts another method; that is to say, he makes a series of guesses until he finds the true root. All these calculations he makes with extraordinary rapidity; for example, he gave the cube of 27 in less than six seconds.

When the attempt was made to ascertain by what mental process Inaudi achieved his feats, it was soon evident that he possessed an extraordinary power of retaining figures in his memory. He can repeat a number containing twenty-five to thirty figures which is read out to him, and retain it in his memory for some time. In one instance he remembered a number containing twenty-two figures for a week, although he was not warned that he would be asked for it again. He can repeat the number forward or backward, or can give any section of it, as for instance, the billions and millions. At the end of a *seance* he can repeat all the figures which have been mentioned to the number of 400.

Though he has this prodigous memory for numbers, his memory is not remarkable in other directions. He can not reproduce more than five or six words heard once, and after a single hearing can not repeat two lines of poetry or prose. His memory for color, form, events, places and melodies are rather inferior to the average, and he is unable to understand how any person can play blindfold chess.

This last observation brings us to the point of greatest physiological interest in Inaudi's case. All other known calculating prodigies have had a visual picture of the numbers with which they were dealing, and the calculator Bidder even stated that he could not conceive the possibility of mental calculations without the power of representing to oneself the figures as though they could be seen. Mr. Francis Galton, by inquiries among accountants and other persons much engaged in calculations, ascertained that this power of calling up a mental picture is commonly possessed by them to some degree, and that often the figures are disposed in certain lines or groups peculiar to the individual. Inaudi has no such power. "I do not see the figures," he informed the Commission. "I may even say that I have much more difficulty in recalling numbers and figures when they are written than when they are spoken." The commissioners satisfied themselves that "Inaudi calculates with greater ease when the problem is put to him by word of mouth than when it is placed before him in writing; the sight of the figures embarrasses him, and, reverting to the procedure natural to him, he repeats to himself, either aloud or in a low voice, the numbers which he wishes to retain in his memory."

Inaudi apparently always repeats over to himself the number upon which he is at work, and while the calculation is in process he is mumbling to himself. As M. Charcot points out, his memory might be a memory of sounds or the memory of the movements of articulation, or a combination. No means of answering the question thus raised has been devised, but Inaudi himself is confident that it is the auditory memory upon which he depends, and M. Charcot believes that the memory of movement, if it plays any part, has only a very subsidiary part in reinforcing the auditory phenomena, which in any case are the first in time.

It will be seen, therefore, that Inaudi's powers of mental calculation depend entirely upon an extraordinary memory for numbers heard, therein differing from other calculators who remember numbers seen. The distinction will be well perceived by inspecting such a number, as, for instance, 436,729,342,687, and comparing the mental impression or image with that produced by repeating aloud four hundred and thirty-six billions, seven hundred and twenty-nine millions, three hundred and forty-two thousand, six hundred and eighty-seven. Probably Inaudi's auditory memory will appear to most people far more surprising than the visual memory of other calculators. This peculiarity is no doubt to be traced to the fact that until he was twenty years of age he knew numbers only by hearing and not by sight. It is interesting to speculate whether the growth of this memory would not, in fact, have been checked by early education, especially early instruction in reading and writing. Certain it is that among primitive peoples the memory for spoken words must have been very much more highly developed than is commonly the case among the civilized reading and writing folk of the present day.—*British Medical Journal.*

DOES LIGHTNING SOUR THE MILK?

It is a well known fact that milk is especially apt to sour during the prevalence of a thunderstorm, and from this it has been surmised that the electric discharge held some mysterious sway over the lacteal fluid. An Italian experimenter, one Professor G. Tolomei, has been making trials of various sorts, the object being to throw some light on electric influence over milk molecules. In his first experience he passed an electric discharge from a Holtz machine between two balls of platinum hanging two inches apart in a bottle containing a quart of fresh milk; secondly, by sending a current between two strips of platinum at the bottom of a V tube filled with the same fluid; thirdly, by subjecting milk in a test tube to the action of a strong battery current through a silk covered copper wire wound spirally around the tube.

In each one of these experiments, which were as thorough as any lover of science could wish, it was proved that acidulation of the milk was delayed instead of hastened, as had been expected. Three equal portions of milk from the same milking thus treated began to grow acid on the seventh, the ninth and the sixth days, respectively, while other portions of it which had not been treated with electricity was rankly acid on the evening of the third day. Having thus disproved the popular theory of lightning being the direct cause of the acidification of milk, Professor Tolomei tried ozone and found therein the mystic agent of milk souring. In his second trial of ozone he brought the surface of a quantity of milk close to the two balls of the machine used, and the fluid almost instantly became acid in consequence.

Here at last a mystery that has puzzled professors and peasants alike has been made plain.—*St. Louis Republic.*

CANNED VEGETABLES.

REPORT OF INVESTIGATIONS AND ANALYSES.

BY K. P. M'ELROY AND W. D. BIGELOW.

[Continued.]

COPPER-GREENING IN FRANCE.

In the same year a manufacturer of canned foods called the attention of the Parisian police to the fact that foods greened by copper were on sale in Paris, and stated that this was dangerous to health. The police bought 18 samples of the goods in question and submitted them to Pasteur for analysis. This chemist reported the presence of copper in 10 samples.

"Dr. Galippe, in his study of the toxicity of the salts of copper, came to the conclusion that they were not poisonous. Granting that later experience confirms his results, the government should none the less proscribe the treatment of food with copper salts. He who asks for peas (petits pois) asks for a natural product of the vegetable world, from which copper is absent. Toleration of copper-greening should not be granted, save on the condition that the manufacturer and retailer legibly mark the packages containing peas thus treated: 'Peas greened by copper salts' ('conserves de petits pois verdis par les sels de cuivre'). In this case toleration amounts to prohibition, since it is not likely that the consumer would buy goods bearing this inscription."

The Conseil adopted his report at the meeting on February 9, 1877.

M. Pasteur's letter was submitted to the minister of agriculture and commerce by the Paris prefect of police, May 17, 1877, together with a statement from the president of the association of Parisian canners, a M. Dumagnou, saying in effect, first, that experience had demonstrated that copper in the quantities used was harmless, and, secondly, that the rigorous enforcement of the law of February 1, 1861, by interdicting the practice of copper greening, would effect the complete ruin of the preserving industry.

On receipt of this communication the minister laid the question before the Comité consultatif d'hygiène, which appointed another commission, this time composed of MM. Bussy, Fauvel, and Bergeron. M. Bussy had been a member of the 1860 committee. On July 15, 1877, Bussy submitted a report, reaffirming the conclusions of the former commissions. Abstracted the report reads as follows:

"The leading argument of the manufacturers who are using the copper process of greening peas is that the consumers prefer those brands in which copper is used, and that this fact has forced the use of the process. Doubtless it is true that buyers prefer 'green peas,' but not 'peas greened with copper sulphate,' as is shown by the statement of the manufacturers themselves, that not a can would be sold if it were so labeled. It is an adulteration by which the buyer is forced to take, contrary to his intentions, a food which he would regard as prejudicial to health if informed of its true character. Furthermore, it is contended that the amount used is not dangerous; but who can answer for the innocuousness of a possibly poisonous substance, administered daily for indefinite periods? Who can give a safe limit, taking into account varying ages, constitutions, and states of health of possible consumers? Grant that a limit could be fixed, would the manufacturers who have violated the existing law—a matter easily detected—be more likely to observe a law whose violation would be far more difficult of detection? Who will answer for the mistakes and carelessness which pertain to every industrial process?

"From the point of view regarding public health, two considerations dominate all others: (1) salts of copper are poisonous; (2) their addition imparts no useful quality to the food, but only a factitious color intended to mislead the consumer. Even if there were no other methods of preparing these foods than this, this one would be inadmissible; but there are others.

"If those now known do not prove satisfactory, and the demand for green vegetables should still continue, it is not too much to require of the science and industry of our packers that they should find a process for securing the desired results without the use of questionable means."

The report was accepted and the prohibition of the use of copper renewed.

M. Bussy again appears on the scene in the next year, 1878, as a member of another commission to investigate the copper question, his colleagues this time being MM. Wurtz and Gavarret.

It appears that MM. Lecourt, a canner, and Guillemare, a professor of chemistry at Rheims, addressed a joint petition to the minister of agriculture and commerce. The substance of the document was that the petitioners had discovered a method of greening peas not dependent upon the use of copper salts, and wished the full rigor of the law brought to bear upon the other canners who still used copper. Abbreviating this petition it reads as follows:

"We have found a method capable of imparting to leguminous preserves the green color required by commerce, yet not involving any dangerous substance. The process is applicable on the large scale, is salubrious, and does not, like the present process, involve the salts of copper so justly prohibited by law. We demand in consequence that the administration, after convincing itself of the value of the proposed process, in the interest not only of justice, but of public hygiene, rigorously enforce the laws against the employment of copper salts for greening vegetables.

"Ought we, in the presence of a tolerance which permits our competitors to manufacture vegetables greened by the inexpensive copper process—a practice which is, according to the Comite d'hygiene, a true fraud—ought we to persevere in the use of a process which, under these conditions, is unprofitable and irksome? We think not.

"We beg the minister to submit our process of greening by chlorophyl to the Conseil d'hygiene. We believe that our method would meet with approbation. We would further ask that the laws which regulate the matter of copper greening be rigorously enforced."

The petitioners' process consisted in the addition to the vegetables to be greened of an alkaline solution of chlorophyl, preferably extracted from spinach.

The petition was referred by the minister to the Comite which appointed the commission just named. A report was rendered December 30, 1878. The result of its deliberations may be summed up as follows:

"The process submitted by MM. Lecourt and Guillemare gives satisfactory results, and from a hygienic standpoint is free from the objections which have been urged against the use of copper and its salts.

"However, while awarding commendation to the petitioners, the commission regard it as desirable that the Comite should express the opinion that, no matter how offensive the means employed, it is desirable that the manufacturers renounce all artificial methods of coloring. It is believed that the public would prefer vegetables of good quality with their natural color to those presenting the seductive green which could be a means of concealing inferior quality.

"This progress in the methods of food preserving, however, furnishes a further reason for a more vigorous enforcement of the laws prohibiting the use of salts of copper for coloring vegetables.

"The commendation of the administration should be expressed to the petitioners for the service they have rendered public health."

This was not altogether unmixed commendation.

[To be continued.]

MISCELLANEOUS.

ON THE KEEPING OF PETS.

BY E. L. T. HARRIS-BICKFORD, F.S.SC.

Most people have a predilection for pets of some kind. Either their affection is centred on a shaggy, terrified-looking terrier, whose tail is continually hiding away between its legs, as though afraid of extending itself into the world like the tails of other dogs; or their love is bestowed on a "poodle," whose face, for ruggedness of contour, resembles a rock more than anything, or a piece of pumice-stone. Or, perhaps, it is a love-bird—that little yellowy-green bird, yellow of body and green of wing—that attracts their sympathy; however, whichever and whatever it may be, whether bird, beast, insect, or reptile, "pets" will still be considered as essentials by some minds, mostly lonely minds, that have fixed principles and plans of their own, and stoutly follow them. I would not say for a moment that I dislike to see a bird cage hanging in a room, or in the passage or porch, as the case may be. If the occupant sings well it must naturally be a charming addition to a house, for there can scarcely be too much melody in an abode that is really intended to be cheerful. If "Miss Mabel," the idol of the family, takes delight in "Birdie," and "Birdie's" antics, feeds it regularly, places in its cage clean seed and fresh water daily, with a lump of sugar by way of dessert, and a bit of groundsel now and then as a luxury, surely nothing can be said against her retaining her pet, provided she treats it thus in a proper manner. But it is too frequently the case, I fear, that "pets" are "petted" to their own punishment, especially children's pets, for the juveniles soon tire of such things; that is, the generality of them do; and neglect, and very sad suffering, very often, is occasioned in consequence. On the other hand, to see a grown-up person taking an interest in "pets" of any kind is a sign that all sympathy has not departed, It is a living link between their present state and the days of their youth, when animals were sought as playmates, and the gambollings of a feathered life as a pleasant pastime. "Polly's dead,"a friend said to me not long since, and the voice being suitably sepulchral, I was somewhat startled. On reflection, however, I knew he referred to the parrot, a young bird of the gray kind, that had not long commenced to talk. That he really missed the bird his tones made evident.

Speaking of parrots as pets—and very great pets they can be made sometimes—I knew a doctor once who had one hung in his surgery, and being a bird of particularly polite habits, he would, on seeing a patient enter, inform them—with considerable unction—that "the Doctor was coming." Sometimes Mr. Poll would add to this information by requesting them to "sit down," and I have even seen people take their seats upon that invitation; thinking, of course, that the invite had come from within. Not that Polly, in this case, was anything of a ventriloquist, far from it, but he had a peculiar habit, nevertheless, of intoning his speeches which made them deceive the wariest. He could also, at a push, be very personal. For instance, if an Irishman entered, he would immediately speculate, "You're Irish!" in the most contemptuous tone; and the peculiar part of it was that he never said this to an Englishman, Scotchman or Welshman, but to "the identical article itself!" But Polly was shrewd in his own stolid fashion, shrewd to perceive; and he'd sing a bit too, and whistle like a schoolboy, was a particular friend of the cat (!) and just getting to master his profane vocabulary to an alarming extent (a vocabulary, by the way, which parrots seem to master more quickly than any other), when a riot broke out in the town betwixt police and civilians, and Polly, having been given to the superintendent previous to that skirmish, the last I heard of him was that he had been bundled out into the station-yard, amidst the wreck of things, cage upside down, and himself orating lustily! So much for the Doctor's parrot.

I suppose of all pets in England, the canary is the favorite and the oftenest to be found located in English homes. Being a clean little bird, and particularly dainty in its mode of life, this preference is not much to be marvelled at, besides the expense attached to keeping it is next to nothing and installed in a fancy cage it is indisputably an ornament for the drawing room of a king. I was at a friend's house the other day, where he keeps a pet, a bullfinch, and a more savage little tartar it were impossible to depict. Just place your finger against one of the wires, and he would attack it viciously, every feather erect, beak wide open, and eyes a ruby red! I was surprised at first, for the little creature really much resembled a small hawk, and would not be content with flying at your finger merely, but peck at it savagely, and tug at it to boot! Seeing the duel being carried on betwixt the bird and myself, Mr. O—— laughed, and said the action was nothing new, for whoever put their fingers near that cage were going to have it, no matter who they were. But as though to counteract this vicious tendency, the bird was a brilliant songster, and presently I had the pleasure of hearing it gush, trill, and swell forth melody that made the room re-echo The only wonder was that so much music could come from so small a body; all anger forgotten, there it stood, a bit of living song, lost, as it were, to all terestrial matters.

Offered again and again a considerable sum, my friend would not hear of parting with it, and he has it still, a full-fledged tartar, but a splendid singer. The relation of this incident recalls to mind the hearing of another bird of the same kind, at Penjersick, Falmouth. The proprietor, a Mr. F.——, a hermit almost, took special delight in all winged creatures, and it was no strange occurrence to see him of a morning or evening, standing at his door with his pets around him, on shoulders, head and arms, composed of thrushes, swallows, robins, wrens, blackbirds, greybirds, and in fact all the feathered families familiar to those parts. But the best treat of all (I was a very little boy at the time, and insignificant accordingly) was the hearing of the bullfinch, as referred to above. Invited in, Mr. F—— showed us into the room where the wee thing was, the said wee thing being diligently engaged in "nibbling" a bit of sugar, which his friend and tutor had placed between the bars for him. Opening the door, Mr. F—— made a movement, and out came the bird, and, perching on his shoulder, sang "Home, Sweet Home," as clearly, as faultlessly, and as proficiently as could any prima donna. Having done as much, the performing mite next gave us, at request (!) a couple of airs more, showing just the same skill and exactitude of execution as previously, then bowed and withdrew. To see that bird bow was a picture, and, needless to say, Mr. F—— was very proud of his pet, as indeed he had need to be, for a more charming songster I had never before heard, the very "notes" seemed "words" as warbled by it, at any rate, they carried a meaning far beyond their sound, a fact remarked by all of us.

An aviary in a house is a capital thing, especially if it is composed of a well-selected variety, and is situated in a prominent position, where the sun never strikes too warmly, and no draught occurs. Draught is fatal to birds. Herein the trunk of a tree may be placed for the occupants to rest on, two or three trunks in fact, in accordance with the size of the cage. To construct this, very little wood is required, whilst the more wire netting employed the lighter will be its appearance. I remember seeing a first-rate aviary at C—— once, in a shop kept by B——. It was on a very extensive scale, well planned, well ventilated—a great consideration—and altogether in excellent condition. Herein his "pets" disported, and very seldom indeed was there "silence in the camp," for one or other of the feathered inmates would be venting its soul in song, whatever time during the day you chose to visit it. Amongst other domestic pets that may be set down in the bird category, doves strike the fancy of not a few people, but to my mind they are very melancholy creatures, their continuous "coo-o-o, coo-o-o" at morning and at evening being anything but inspiriting. I had my "roost" once just over a pair at night, and to lie awake during the small hours to hear dove-sermons was simply terrible—it set one's nerves all of a tingle. If really given my choice I would just as soon be serenaded by "minstrel" cats and hear their chorus as the dismal, deathly, sepulchral coo! coo! of the doves. Beyond being both sad in appearance and sad in action, doves require the closest attention, and if not regularly and tenderly treated will never flourish. Departing from bird-consideration, dogs have, from time immemorial, been made great pets of or little pets as the case might be, by children as well as by adults.

Outside of humanity, the dog is certainly the nearest friend to man, and is loved by him as the Arab loves his steed. He obeys, honors, watches him, awaits him, looks up to him, carries out his orders with sagacity and promptitude when trained so to do, and, for reward, just a pat on the head or a smile is sufficient recompense. Does a dog reason? One would think so sometimes, and I never saw this idea more accurately illustrated than in an etching, some time since, in which a huge St. Benard was depicted in the act of watching a tortoise. The measured movements and peculiar construction of the latter seemed to afford the former much food for thought, and the large ears of the animal appeared as though weighed down by the very fact of that thought's intensity. A student of nature? Well! can't say, I'm sure, whether a dog can be termed that, but I know "Soldier," a canine friend of mine—presumes to analyze a bee! for one, slightly disabled, being inside my study-window recently, he came across it, looked at it, played with it, marvelled thereat, or looked as though he did, finally giving up the affair as a bad bargain, fearful apparently that the insect might possibly sting him!

"Soldier" is a very much spoiled "pet," and very shrewd at times, but perhaps a bit of verse will best depict him:—

A Statesman wise old "Soldier" seems,
His silent speech makes blue-fits flee,
He strives to draw me from deep dreams,
To criticise his foolery.
But then, he proveth friend to me,
Methinks his head with wisdom teems,

A very fountain of pure fun,
Seems in his heart to leap and play;
When literary toil is done,
And pen is dropped with death of day,
Then "Soldier" holds completest sway,
Sitting with me to tea and bun.

With paw upheld he craves converse,
By wagging tail and shaking head;
E'en seems to wish one to rehearse
Works I have written, or have read,
Then 'neath my table makes his bed,
Till sleep doth every mood immerse.

Keen, watchful-eyed, at times he lies,
A stranger would suppose, "he sleeps;"
When to the door he, raging, hies,
And thus continual sentry keeps;
He tears my papers up by heaps,
Chief feature of his villainies!

But "Soldier" is a rare good dog,
Take him throughout; Can man be more?
His "'cute gymnastics" never clog
The taste; he sometimes seems to pore
The last new "Monthly's" pages o'er,
Like Preacher in a Synagogue!

At the present moment he is "banging" the canvas outside in the passage with his tail—a peculiar trick of his when particularly pleased. Passing to other dogs, undoubtedly the Newfoundland breed is the best of all, that is, the most to be relied on. The terrier types are inclined to be "snappy," whereas the former, usually, is very sweet-tempered, and take almost as much delight in children's games as children themselves do, "Carlo" or "Ponto" being a wonderful friend to them.

Speaking to a man the other day who had a sheep dog with him, he said, in reply to a remark of mine regarding that animal, "Oh, yes, I can manage the largest flock of sheep hereabouts with that dog, and never get off my horse; she'll see them right." The dog referred to was lean, one of her legs almost entirely stiff, and her coat of that "grayish tint" that denotes age in animals, but at the well-known signal from her master the leg was forgotten, and away she went promptly to her work, her efforts at "marshalling" being entirely successful.

Regarding the feeding of dogs, biscuit and odd vegetable fare, such waste as may accumulate from a dinner table, are much to be preferred to raw meat, a practice which has a tendency to make them savage, and in face of which, if meat is given, it should be well dressed meat—but biscuit should be the staple fare, the article sold nowadays being quite equal to the support of life—containing as it does, meat in proportion to other materials. No dog should have at all less than two meals per diem, and these good meals, with at all times a plenty of cool fresh water.

And now, ere I conclude what was only intended in the first place to be a bit of chat on pets in general, I would make one observation, and that is, that the fact of keeping them should entail strict regard as to the way in which they are kept, cleanliness being as essential to their management as to the arrangement of a dairy. Attention should be regular, meals regular, water clear, food fresh, or else in appearance your pets will deteriorate, and instead of being ornaments to a house, will become the reverse. To see a cat curled up cosily on your hearthrug is a pleasing sight, where "sleeky fur" and "happy purr" go hand in hand together. As I before remarked the keeping of pets rightly certainly will tend to the strengthening of our sympathies, and without being particularly cynical, I think that some folks fashioned in the form of man and woman—would be all the better were they to procure a whole regiment of them and "drill" them every day. As regards children, bring them in contact with domesticated animals as early as possible, let them spend hours in watching them, feeding them and so forth, for no kind of recreation will have so great a tendency to mould their characters as they should be moulded, and of breeding in them a due regard for the three essentials of life: charity, kindliness and considerate regard.

TO IMITATE OLD BRONZE.

The repeated applications to copper or brass of alternate washes of dilute acetic acid and exposure to the fumes of ammonia will give a very antique-looking green bronze; but a quick mode of producing a similar appearance is often desirable. To this end the articles may be immersed in a solution of 1 part of perchloride of iron in 2 parts of water. The tone assumes darkness with length of immersion. Or the article may be boiled in a strong solution of nitrate of copper. Or lastly, it may be immersed in a solution of 2 ounces of nitrate of iron and 2 ounces of hyposulphite of soda in one-half pint of water. Washing, drying and burnishing complete the process.

CLEANING WALL PAPER.

There is probably no better way than the old-fashioned method of carefully rubbing it with moderately stale bread. After removing the dust by a bellows or careful brushing, cut a piece of bread of convenient size, free it from crust, and with the soft part begin at the top of the room and wipe lightly downward, about a half-yard at each stroke, and so continue until all the paper has been gone over. Care must be taken not to rub the paper hard, and the surface of the bread must, of course, be frequently removed so as to expose a fresh portion.

GLOVES.

DRESSED KID THE MOST DURABLE—A TIGHT GLOVE IS NOT A FIT.

Suede or undressed gloves do not wear as well as glace, or dressed kid, but are still favored for dressy calling and church wear in eight-button mousquetaires, unless a four-button glace of the most expensive brand is preferred, as it often is by very conservative tastes.

The ordinary four-button glace glove is worn for shopping and traveling. The buttonless Biarritz glove, at $1, is very stylish for traveling and morning wear, and should fit looser than a "real" kid glove.

Self-stitching is more stylish than black on any glove just now. Tan and gray shades lead for day wear, though some fancy shades are seen, but they should be worn with costumes of the same tone, and avoided unless one possesses many changes. The lacing glove suits persons having fleshy wrists. A perfect fit does not mean a cramped appearance of the hand.

According to the *Domestic Monthly* the complaint that gloves are made too short in the fingers comes, in nine cases out of ten, from women who wear their gloves too small. A lady who takes six and three-quarters can get her hand into a six and one-half glove; but in doing so the length of the glove is taken up in the width, and consequently the fingers, instead of going well on, only go partly on. The thumb fares still worse, for it reaches, as a rule, only down to within a quarter of an inch of its proper termination, the end of the glove, which is cut to go around the wrist, having to be joined across the ball of the thumb. Of course it is absurd to suppose that any glove will stand such a strain, or will look well when dragged so completely out of shape. We might as well attempt to put a stocking over a gooseberry bush as to draw a six-and-a-half glove over a six-and-three-quarter hand.

The glovers tell us that one of the still unexploded fallacies is that a glove to fit well must fit tightly, the fact being that a comparatively loose-fitting glove has a far better appearance than one that is half a size too small, because the proportion of the hand is preserved. Would a woman, ask the glovers, wear a dress so tight that her figure seems bursting out of it, and drawn into all sorts of contortions as a consequence of its smallness? Yet, the same woman will wear a glove on her hand so tight that the fingers look like sausages, and the back of the hand like parchment stretched on a drumhead. Many a woman's hand has a stumpy appearance when ungloved, and this is undeniably due to the practice of wearing gloves which can only be induced to go on with the greatest difficulty.

Another great question is that of the price of gloves. There is a great demand for cheap gloves. And no wonder. Gloves are one of the most costly items of dress, and probably the one which gives rise to the most heart-burning and disappointment. The difficulty rises from forgetfulness of the fact that genuine kid is a scarce article, and will always command its price If women would cease to wear gloves that are too small for them, and would pay the price which will insure a genuine article, their expenditure on this head would be less and their satisfaction greater.

TRUE ECONOMY.

It is impossible to ignore the fact that these are hard times. Employment is diminished, business of every kind is at low ebb; money is scarce and everybody is practicing economy to an extent never known before in this country. Even the doctors feel that the desperate impecuniosity of the community affects their practice very seriously. It has been no uncommon thing to hear a man more obstinate than wise in his devotion to money-getting say, "I cannot afford to be sick; I have no time." And by sheer force of will determined men have doubtless in many instances staved off illness. But that is not what makes the doctor feel lonesome now. People have plenty of time to get sick, but no money to pay for medical treatment. A New York physician, interviewed by a reporter the other day, said: "In times like these, people think twice before they send for us. Unless they are really very ill, they will wait for Nature to cure them. When the children are sick, they treat them themselves, unless it becomes absolutely necessary to call a doctor. In case the grip becomes epidemic now it is not unlikely that it will show a very high rate of mortality, simply because people will be half dead before they will look for medical assistance." He is doubtless right in that forecast, but there is also great danger to be apprehended, even if there is no epidemic. An old proverb affirms that "the man who is his own lawyer has a fool for a client," and he who is his own doctor in any serious case has a patient not much wiser. At the same time, when economy is almost a popular mania, people will take chances, even though they risk their own lives and those nearest and dearest to them. Undoubtedly, Nature often cures, with little aid from the doctors and even in spite of them, but she cannot do so when she is handicapped by the insufficiency of her means. One who has unimpaired, active organs, and good pure blood, may throw off attacks of disease and save his money from the doctor, but let him lack those requisites when he trusts to Nature and the undertaker is pretty sure to get what the doctor has missed.

It is, of course, advisable to always keep one's self in a sound and healthful condition, but never so imperatively necessary as in times like these, when considerations of economy tempt us to make light of our ailments and either leave them to "get well of themselves" or try our own amateur skill in their treatment.

The basic necessity for health is pure, rich blood, and this cannot be had if the organs of digestion, assimilation and excretion fail of their respective functions, any more than if the life current is tainted by specific engendered or inherited diseases. Hence, the truest economy in times like these is to remember that "an ounce of prevention is worth a pound of cure" and get one's self into the best possible physical condition For this the primary necessity is a thoroughly reliable and efficient blood "alterative" medicine —not simply any one of the many nostrums vaunted as such by their makers, but the specific one that will really do the required work and that one, beyond all question, is Ayer's Compound Extract of Sarsaparilla. Half a century's experience of its efficacy, by the medical profession and the general public all over the world, has established its reputation as a standard officinal preparation. Its components are known to be Honduras sarsaparilla, stillingia, yellow dock, mandrake, and the iodide of potassium, ingredients of the highest potency for expelling from the blood such effete and foreign matter as is carried there by perversion of the assimilative or inaction of the excretory organs, and also for eliminating specific disease taints of even the worst type.

They're going to Pieces both the women who wash, and the things that are washed, in the old-fashioned way. That constant **rub, rub, rub,** over the washboard does the business. Hard rubbing is hard work. Hard rubbing wears out the clothes; hard work wears out the women.

There's nothing of the kind, if you'll let **Pearline** do the washing. All you'll have to do, then, is to look after it.

It'll save all this work and rubbing that does so much harm. But, because **Pearline** makes washing easy, you needn't be afraid that it isn't safe. That idea is worn out. Just as your clothes will be, unless you use **Pearline.**

Beware Peddlers and some unscrupulous grocers will tell you "this is as good as" or "the same as Pearline." IT'S FALSE—Pearline is never peddled. if your grocer sends you an imitation, be honest—*send it back.* 385 JAMES PYLE, New York

Indigestion

Horsford's Acid Phosphate

Is the most effective and agreeable remedy in existence for preventing indigestion, and relieving those diseases arising from a disordered stomach.

Dr. W. W. Gardner, Springfield, Mass., says: "I value it as an excellent preventative of indigestion, and a pleasant ascidulated drink when properly diluted with water and sweetened."

Descriptive Pamphlet free.

Rumford Chemical Works, Providence, R. I.

Beware of Substitutes and Imitations.

For Sale by all Druggists.

CHINESE ABBREVIATION.—A lady in Hong Kong engaged a Chinese cook. When the Celestial came, among other things she asked his name. "My name," said the Chinaman, smiling, "is Wang Hang Ho." "Oh, I can't remember all that," said the lady. "I will call you John." Next morning when John came up to get his orders he smiled all over, and looking enquiringly at his mistress asked: "What is your namee?" "My name is Mrs. Melville Landon." "Me no memble all that," said John. "Chinaman he no savey Mrs. Membul Landon—I call you Tommy."—*Boston Globe.*

◆

WHAT'S IN A NAME.—Miss Sawyer, who is poor, was introduced at a lunch party to Miss Taylor, who is rich, and was coldly received. Miss Sawyer is bright and knows her own antecedents, and Miss Taylor's also. She was unabashed and spoke cheerily: "I'm so glad to meet you. I've often wanted to. It's so funny—my name is Sawyer and my grandfather was a tailor, and your name is Taylor, and your grandfather was a sawyer. Mine used to make clothes for yours, and yours used to saw wood for mine."

◆

The President tells the office-seekers that their room is better than their company.

◆

DEAFNESS CANNOT BE CURED.

By local applications, as they cannot reach the diseased portion of the ear. There is only one way to cure deafness and that is by constitutional remedies. Deafness is caused by an inflamed condition of the mucous lining of the Eustachian tube. When this tube is inflamed you have rumbling sound or imperfect hearing, and when it is entirely closed, deafness is the result, and unless the inflammation can be taken out and this tube restored to its normal condition, hearing will be destroyed forever; nine cases out of ten are caused by catarrh, which is nothing but an inflamed condition of the mucous surfaces.

We will give One Hundred Dollars for any case of deafness (caused by catarrh) that cannot be cured by Hall's Catarrh Cure. Send for circulars; free.

F. J. CHENEY & CO., Toledo, O.

☞Sold by druggists, 75c.

GINGER.

BY J. W. HARLAND.

As a crop, ginger, like horseradish, exhausts the soil, and in the West Indies, where no system of manuring except "fly-penning" is resorted to, planting it means letting the land lie fallow and unproductive for at least three years. "Fly-penning," a term that will need explaining, consists in allowing the cattle employed upon any estate feeding in one space, or area, fenced off with bamboo, until their droppings are sufficient to manure that section of the land. Then the fences are taken down, and the next slice or section is in its turn manured, and so on. On every estate bullock labor is a *sine qua non*, and no cheaper way of manuring is "to hand."

Ginger requires but little labor, merely weeding and hoeing; the roots take about nine to ten months to mature and the digging up is about equal to an ordinary potato crop gathering. Planters in Jamaica never devote much land to the cultivation of the plant, as sugar and rum, its best product, pay far better and permit of double crops annually, or at any rate crops every eight months, whilst ginger, maturing in eight or nine months, exhausts the soil for two years afterwards at least.

I have planted myself small "flats" of half an acre or so, but it never paid me by reason of two causes, viz., (1) That it exhausted the soil; and (2) that however I sent it to market it was cut too fine to pay expenses. This demands explanation. If you dry the roots on the "barbecue" (a flat platform somewhat like the pavement of Cheapside, made of cement and clay trodden down by "niggers" and leveled with wooden shovels) in the sun, and have them turned around to the sun by the "piccanini" gang (*i. e.*, boys and girls of six to eight years of age), captains do not "take it on" at a price that pays for labor and rental of the land. If you preserve it, you have to pay for jars on which not only are there three or four profits, besides duty on importation, but you have to waste at least two sugar boilings before sugar mild enough can be put up with the ginger in the jars From comparison of notes with Englishmen who have lived in Ceylon I know there is the same waste there.

Unless I supply more detail I guess this will not be fully understood. The manufacture of preserved ginger is simply this: The roots are first bruised after washing free from soil, and then thrown into a copper pan in which cane sugar juice is boiling. The ginger is then got out of the syrup and drained with ladles of the ordinary "colander" type. The syrup hot enough to blister the hand, is *thrown away*. A second boiling next takes place, and the syrup, still strong enough to blister your tongue, is again thrown away. The third boiling in sugar alone is considered fit to use with the now softened roots as syrup, which is poured over the preserved ginger in the jars. I hereby hint to ginger beer makers and to lozenge makers that if they purchased what is now thrown away it would pay them better than buying the high-dried root. A concentrated syrup of ginger ought to become a valuable import; it is thrown away now and only awaits orders to be saved and sent. It is subject to no duty, any more than treacle, and like it only needs to be put up in barrels, between the staves of which, in grooves prepared, rushes are laid which swell if there be leakage, and prevent waste on its passage here. Preserved ginger would be just as it is now, whilst the syrups now thrown away as waste products would be very profitably utilized. This would pay planters for the loss of vitality in the soil for a couple of years after growing a ginger crop, whilst importers would gain all round.

I am given to understand that not only ginger wine, but even preserved ginger, are adulterated by an admixture of horseradish; and have tasted, years ago, a condiment made somewhat like chutney of horseradish and syrup, in which a little ginger and spices with tomatoes were introduced. It is very good and cheap, but should be labeled and sold as such.

* * *

SCARFS THAT DEMAND A PIN.

The scarfpin should always be worn with the flat, madeup scarf. There is a place for its insertion, and by seeming to hold it together it attains a utilitarian phase, in that it is an aid in glossing over the percentage of madeup suggestiveness that is always more or less associated with the imitative article.

The madeup flat or puff scarf, if worn without a scarfpin, discloses its artificiality in all the baldness of its mechanical inferiority. It is a curious paradox in the fashions, therefore, that the scarfing that does not actually need the scarfpin in reality requires it most of all.

In the self-tied De Joinville, or its madeup reproduction, the scarf pin must pierce the crossfolds at the intersection.—*Clothier and Furnisher.*

* * *

NOT IN AN APPRECIATIVE POSITION.—McBride—I can't appreciate you funny fellows' jokes about women who shop but never buy.

Snickers—Can't you? Why?

McBride—The bills which come in on the first of every month seem to act as a preventive.

* * *

NO RISK.—"This is your sixth trip across the ocean, is it?" said the timid passenger. "Are you never oppressed by a fear that the ship will run into an iceberg and sink?"

"Never, madame," replied the businesslike passenger, briskly. "I never invest a cent of money in ships."

TWIN REMEDIES

BUFFALO LITHIA WATER AND HOT SPRINGS WATER

In Bright's Disease, Uric Acid Diathesis, Gout, Rheumatic Gout, Rheumatism; their value in Calculi.

Dr. Algernon S. Garnett, *Surgeon (retired) U. S. Navy, Resident Physician, Hot Springs, Ark., says:*—"My experience in the use of BUFFALO LITHIA WATER is limited to the treatment of Gout, Rheumatism and that hybrid disease 'Rheumatic Gout' (so-called), which is in contradistinction to the Rheumatoid Arthritis of Garrod.

"I have had excellent results from this Water in these affections, both ***in my own person and in the treatment of patients for whom I have prescribed it.*** Of course the remedial agent is its contained Alkalies and their solvent properties.

"Hence it is a prophylactic as well as a remedy in Nephritic Colic and forming Calculi, when due to a redundancy of Lithic Acid."

Dr. Wm. B. Towles, *Professor of Anatomy and Materia Medica in the Medical Department of the University of Virginia, former Resident Physician, Hot Springs, Va., says:*—"I feel no hesitancy whatever in saying that in Gout, Rheumatic Gout, Rheumatism, Stone in the Bladder, and in all Diseases of Uric Acid Diathesis, I know of no remedy at all comparable to BUFFALO LITHIA WATER.

"Its effects are marked by causing a disappearance of the Albumen from the urine. In a single case of Bright's Disease of the Kidneys, ***I witnessed decided beneficial results from its use,*** and from its action in this case I should have great confidence in it as a remedy in certain stages of this disease."

The late Dr. Wm. F. Carrington, *Resident Physician, Hot Springs, Ark., Surgeon (retired) U. S. Navy, says:*—"BUFFALO LITHIA WATER, Spring No. 2, has signally demonstrated its remedial power in Gout, Rheumatic Gout, Rheumatism, Uric Acid Gravel, and other maladies dependent upon the Uric Acid Diathesis.

"It not only ***eliminates from the blood the deleterious agent*** before it crystallizes, but dissolves it in the form of Calculi, at least to a size that renders its passage along its ureters and urethra comparatively easy. Send twenty cases No. 2."

Dr. T. B. Buchanan, *Resident Physician, Hot Springs, Ark., says:*—"Send me five cases BUFFALO LITHIA WATER, Spring No. 2. I have made use of this Water for Gout in my own person and prescribed it for patients similarly suffering, with the most decided beneficial results. I take great pleasure in advising Gouty patients to these Springs."

Water for Sale by All Druggists. Pamphlets sent to Any Address.

THOMAS F. GOODE, Buffalo Lithia Springs, Virginia.

ALCOHOL AND CRIME.

When in Paris two years ago we were struck with the universality and freeness with which wines and other stimulating liquors were used. You could see it everywhere. On the table it was more common than water. It was said that there was. however, comparatively little drunkenness—that having it so constantly, and obtaining it so cheaply, there was no occasion to drink to abuse; that while they drank to stimulation, they seldom drank to excess or to confirmed inebriety. Although this alleged result was contrary to what we had everywhere observed in America, we were hardly prepared to deny it. We could only wonder why it was so; and why alcohol did not have the same inebriating and demoralizing effect on the Frenchman that it had on the Englishman or the Yankee.

The chief medical officer of the prefecture of police of Paris is Dr. Paul Garnier. He is a man of wide reputation, a careful observer, a typical Frenchman, a close student of Parisian criminal life, and of the causes contributing to it. In a recent statement, as a matter of fact, and not from any sentiment antagonistic to the social customs of his city, he says:

"The progress of alcoholic insanity has been so rapid that the evil is now twice as prevalent as it was fifteen years ago. Almost a third of the lunacy cases observed at the Depot Infirmary are due to this disease. Every day it declares itself more violently, and with a more marked homicidal tendency. The accomplice of two-thirds of the crimes committed, upon whom the criminals themselves throw the responsibility of their evil deeds, is alcohol. It visits upon the child the sins of the father, and engenders in the following generation homicidal instincts. Since I have frequented the haunts of misery and vice in Paris, I have observed gutter children by the hundreds who are only awaiting their opportunity to become assassins—the children of drunkards. Moreover, there is a terrible flaw in these young wretches, a flaw which doctors do not observe, but which the psychologist sees clearly and notes with apprehension—*the absence of affectionate emotions*; and as a matter of fact, if these criminals are neither anæsthetiques nor lunatics, their characteristics are insensibility and pitilessness."

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WHEN WOMEN BOARD.

Every woman ought to possess her own home, no matter how small or how grand it is. Still she should possess one place to call her very own which keeps her sufficiently employed to prevent her getting into mischief. That sounds, perhaps, a little harsh, but any truthful, observant person will coincide with the writer in pronouncing a boarding house a hotbed of gossip and imaginary ailments.

Women thus situated have not enough to do to keep them occupied. Their beds are made in the morning, their rooms dusted and their meals served with no planning on their part; therefore their days are given over to the ripping up of a gown, a few letters to write, perhaps a dressmaker in the house for a day or two spring and fall, and the remainder of their idle hours taken up in fancy work and visits to each others' rooms that result in untold gossip and imagination of bodily complaints. A new arrival furnishes food for conversation that lasts until the next one comes or some one already installed does something that the council of three or ten regards with disapproving eyes. Her gowns, her jewels, her visitors and her domestic relations are touched upon with unsparing harshness. They sit in judgment on actions that they know nothing regarding their incentive, and condemn or extol according to the limitation of their own horizon, while if they were to be believed they are at the very verge of death, so numerous and changing are the ailments which they have ample time to note, though busier mortals endure or fail to notice symptoms which these women boarders magnify into terrifying complaints. If one needs rest then, indeed, is life in a boarding house an apt prescription, but for a healthy, active woman there can be nothing so positively deadening mentally and morally as the passive existence she is there forced to lead.

◆

CARATS.

The word "carat" comes from the Abyssinian name for bean. It corresponds in weight with a certain species of East India bean, and was originally used only as a weight, in the same manner as our word "grain" comes from a grain of wheat, and has also its average weight. The exact relation of the carat to the grain, Troy weight, is, in round numbers, as 4.608 to 1.185; or, in other words, 1.185 carats are equal to 4.608 grains Troy. By division of the last number by the first we find for the weight of a carat 3.88 grains, very nearly. The carat is the weight by which jewelers sell diamonds. The carat is now only used for weighing precious stones and pearls, because the grain is too small. In ancient times it was used as the unit of weight for gold, but it is now, on account of the greater abundance of that precious metal, superseded by the ounce. In regard to the alloy of gold, it has been accepted to take 24 carats of gold, or 93 grains, very near, as the standard of pure gold, and to call gold in which 20 carats are pure gold, gold of 20 carats; when three-fourths is pure, or 18 carats in 24 carats, it is called 18-carat gold. So, in regard to the alloy of gold, the word carat has become similar to the expression of a percentage, with the difference that 24 is substituted for 100. So 18-carat gold is identical to 75 per cent fine; 12-carat to 50 per cent fine, etc. That this manner of estimating the value is kept up is simply due to the custom of following the duodecimal system in making alloys, which naturally drives us to the expressions 70, 80, or 90 per cent, when speaking of the fineness of the most valuable metals.

◆

A VARNISH FOR MARBLE.

La Science pour tous says: "While polished marble has of itself an agreeable apearance, the latter may be very much heightened by the application of an appropriate varnish—such, for instance, as is obtained by mixing 1 part of white wax, 1 part of sandarach and 6 parts of oil of turpentine. The solution is effected with the aid of gentle heat in the water-bath (never over an open fire), and is applied with a soft brush. Even white wax dissolved in turpentine highly improves the appearance of marbles. The ancient Greeks applied wax as a finish to all marbles, even the most exquisite statuary, from which fact we derive our word sincere, i. e., without wax, to denote that the individual to which it is applied is au naturel—has not been varnished up."

◆

After the Honeymoon.—She (sweetly)—What would living be without me?

He (gloomily)—Cheaper.

Sunday Papers.—A suburban newsdealer was asked by a lady who had just bought a Sunday paper to do it up for her in the form of a bundle. He told her that he had no wrapping paper to spare, but would lend her a basket to carry it home in. "But I am not going home," she said: "I am going to church, and I don't want any one to see me there with a Sunday paper. Folks won't know what there is in a bundle."

Dates.—A diet of dates is recommended as the latest syle in vegetarianism. It is interesting to learn that "one woman is thriving and working on eight ounces of dates, half a pint of milk, and an ounce of pine kernels taken at intervals during the day." It sounds like very advanced thinking for a woman to care so little for dates that she makes up her mind to live on them. It is out of accord with the old notion that women avoid dates—of birthdays, at least.

What He Did.—"I was in a railroad accident once," said the man in the smoker to a group of listeners, "and had both arms and both legs broken."

"Did you retain your presence of mind?" inquired one of the listeners.

"No."

"No? What did you do?"

"I retained a lawyer, and got $10,000 damages."

There are more ways than one to get money. One man tills his mother earth and another unearths the till of his father.

The Best Food For Children? is worthy every parent's study; not only what they can eat, but what gives the most nourishment. No children are better, and most are worse, for eating lard-cooked food. If, however, their food is prepared with the healthful new vegetable shortening,

COTTOLENE

instead of lard, they can eat freely of the best food without danger to the digestive organs. You can easily verify this by a fair trial of Cottolene. Sold in 3 and 5 lb. pails by all grocers.

Made only by
The
N.K.Fairbank
Company,
Chicago, Boston, New York, St. Louis, Montreal, Philadelphia, San Francisco.

A CHANGE OF FIRM.

The firm of Hummel & Parmele (Medical Journal Advertising) was formed by Dr. A. L. Hummel and Charles Roome Parmele under articles of partnership, which expired by limitation December 31, 1893.

In March, 1892, Mr. Parmele became secretary and treasurer of the Papoid Company, and sold to Dr. Hummel his interest, good will, etc., in the firm of Hummel & Parmele. Since March, 1892, Mr. Parmele has devoted his entire time and attention to the Papoid Company and Dr. Hummel has conducted the business of Hummel & Parmele.

After the expiration of the articles of partnership on December 31, 1893, the Medical Journal Advertising business of Hummel & Parmele will be carried on by Dr. Hummel, as heretofore, under the firm name A. L. Hummel, M. D., Medical Journal Advertising, at 257 South Fourth street, Philadelphia, Pa.

It is the only advertising agency making a specialty of Medical Journal advertising. We have had a considerable number of business transactions with Dr. Hummel and have ever found him straightforward, prompt, looking out for the interests of his customers, yet not attempting to crush or bulldoze publishers. Speaking of this leads us to add that many an advertiser who wonders why newspapers will not give him anything beyond what the contract calls for, would find the reason in the bulldozing, pennywise and pound foolish policy pursued by their advertising agents with publishers. Their interests seem to clash.

BUSINESS NOTES.

COMPOSITION OF SYRUP OF FIGS.

Because the California Fig Syrup Company thought best to name their laxative compound the "Syrup of Figs" it does not follow that the active principle of the preparation is made from the fig. Instead of this being the case, they state freely to the profession that the laxative properties of the syrup are obtained from senna. Hare states in his new work on theurapeutics that both Rutherford and Vignal assert that senna acts very materially in increasing the flow of bile. Hess says that the drug acts directly as a stimulant upon the mucous membrane and so produces a local peristalsis as it is moved along. Hare recommends it especially in the treatment of the constipation of pregnancy. As an ingredient in the compound licorice powder it is one of the oldest and best known drugs. Recognizing the sterling worth of this drug when employed in laxative doses the California Fig Syrup Company has so combined it with other agents that is both pleasant and effective. It might be called a family laxative, useful in all those cases where a freer action of the bowels is desired. The physician is often puzzled to know exactly what to prescribe when the only remedy indicated is something to increase peristaltic action. The therapeutics of senna warrants its recognition at once, while the palatableness of the preparation points to Fig Syrup as the best medium by which this drug can be administered.

It is interesting to note in this connection that the California Fig Sprup Company has just received a decision from the U. S. Court of Appeals confirming their right to the exclusive use of the name of "Syrup of Figs" or "Fig Syrup" when applied to a laxative medicine.

CLAMS AND TOBACCO.

Clams and tobacco are the two greatest American products. Tobacco is known to-day all over the world, but since Burnham's Clam Bouillon has been introduced, it will soon rival the former in popularity, as it is good for men, women and children, when sick, convalescent or well. At all druggists and grocers.

BRAIN-WORKERS

Use Horsford's Acid Phosphate.

When night comes, the literary and active business man's brain is hungry from the exhausting labor of the day. Horsford's Acid Phosphate quickly supplies the waste of tissue, and refreshing sleep results.

Dr. Gregory Doyle, Syracuse, N. Y., says: "I have frequently prescribed it in cases of indigestion and nervous prostration, and find the result so satisfactory that I shall continue its use."

WORDS IN THE BIBLE.

The Bible contains 775,748 words; yet the word clam is not found in the Bible. But Burnham's Clam Bouillon is prized next to the Bible by all mothers who have used it. It saves the babies. At all grocers and druggists.

CONSUMPTION CONTAGIOUS.

Dr. Herman M. Biggs, Chief Inspector of the division of pathology and bacteriology of the New York City Health Department, officially declares consumption to be a contagious disease.

Six thousand deaths from this dread disease were reported in that city alone during 1892.

State and municipal boards of health in all parts of the country agree that consumption is at least an infectious and communicable disease, and that every tubucular person is a source of actual danger.

The disease is transmitted from the sick to the well usually by means of the dried and pulverized sputum floating as dust in the air, and it is estimated that at least one-seventh of the persons who die from phthisis acquire it from breathing the air so tainted.

This being the case it can in a great measure be restricted by the use of proper and unobjectionable disinfectants. Platt's Chlorides, one part to ten of water, frequently sprinkled about the room and the same disinfectant, one part to four of water, in the cuspidor or vessel receiving the poisonous and offensive expectorations is especially applicable. as it is a liquid without odor or color, and its frequent use is not attended with any annoying features

Certainly it is time that more strict surveillance of this destructive disease were assumed by physician and attendant, and if physicians will do with consumption as they have done with other dangerous diseases much suffering and loss of life can be prevented.

KINGSFORD'S
OSWEGO STARCH

The Standard of Excellence.

"PURE" AND SILVER GLOSS
For the Laundry.

CORN STARCH
For the Table.

ABSOLUTELY PURE IN QUALITY.

ESTABLISHED 1823.

ALEX. YOUNG CO., LIMITED,
DISTILLERS OF
Y. P. M. WHISKIES

DISTILLERY, - Nos. 408, 410, 412 and 414 South St.
MALT HOUSE, Nos. 416, 418, 420, 422 and 424 South St.
STORE, - - - - - No. 700 Passyunk Ave.
PHILADELPHIA, PA.

New York Office, - - - 78 Wall Street.
FOR SALE BY
ACKER, MERRALL & CONDIT and PARK & TILFORD.

SHE CLEANED IT.

"Of course it's all very well to keep up with the times an' know all the new improvements an' so on, but I reckon there's one thing that don't change much from year to year, an' that is common sense," remarked Miss Becky Armstrong, briskly. "Well, you're one that ought to know about that, if anybody does," remarked Mrs. Hansom, generously.

"Thank you; I calc'late to keep some by u e as long as I can," said Miss Becky, in graceful acknowledgment; "an' now I'll tell you what made me think of it. You must know that my niece, Jenny, that I've been visitin' down to Boston, had a sweet, pretty spotted muslin dress in her truezue—that's what they call the weddin' outfit—an' she wore it out walkin' with her husband one afternoon before I went there an' got some kind of a darkbrown, blackish spot on it.

"Well, it appears that she tried lemon juice herself an' it didn't take out the stain an' then she consulted with one an' another an' everybody told her somethin' to do. One told her it was an ink spot an' she'd better try rubbin' sal'ratus on it; another said it was wheel grease an' she must rub it with ammonia, an' so it went on.

"When she showed it to me you never saw such a lookin' sight as that spot was! 'Have you tried Pearline?' I asked her, and she said: 'Why, no; what good would that do?'

"I didn't say much, but I whipped that skirt into a basin an' give it a good scrubbin' in Pearline, an' when I took it out the stain was gone an' the water looked pretty black. The dress didn't look just right, on account of the rings the ammonia an' lemon juice, an' so on, had made, but Jenny was real grateful.

"She's young, so all I said was: 'You know there is such a thing as dirt, my dear!' But I couldn't help thinkin' to myself: 'It's a good deal plentier than some other things, an' one of em's common sense!' "—*Exchange.*

Some people think there ought to be more fasting and praying, but they want somebody else to do it.

When the people find out that a man is mean at home, they don't care how good he professes to be at church.

There is something wrong with the father who will tie up his dog at night and let his boy run the streets.—*Ram's Horn*

FREE

$10.00 worth of lovely Music **for Forty Cents,** consisting of 100 pages full size Sheet Music of the brightest, liveliest and most popular selections, both vocal and instrumental, gotten up in the most elegant manner, including four large size Portraits.

CARMENCITA, the Spanish Dancer,
PADEREWSKI, the Great Pianist,
ADELINA PATTI and
MINNIE SELIGMAN CUTTING.

ADDRESS ALL ORDERS TO
THE NEW YORK MUSICAL ECHO CO.,
Broadway Theatre Building, New York City.
CANVASSERS WANTED.

TO THE MEDICAL PROFESSION.

Elixir Salicylic Acid Comp.

PREPARED ONLY BY WM. R. WARNER & CO., PHILADELPHIA, PA.

This preparation combines in a pleasant and permanent form, in each fluid drachm, the following:

℞ Acid Salicylic (Schering's) - grs. v. Potass. Iodid. - grs. iss.
Cimicifuga - - - - grs. i ¾ Tr. Gelsemium - gtt. i.

SO PREPARED AS TO AFFORD A PERMANENT, POTENT AND RELIABLE REMEDY IN

RHEUMATISM, GOUT, LUMBAGO, Etc.

This preparation is especially valuable for rheumatic diathesis and in the treatment of acute inflammatory, subacute and chronic rheumatism; any of which will yield to tablespoonful doses; every three or four hours, until four doses are taken; then a dessertspoonful at a time and finally decreased to a teaspoonful every three or four hours.

In acute inflammatory rheumatism, experience has proven that two teaspoonfuls administered every four hours, until a slight ringing in the ears follows, the dose then decreased to a tablespoonful every three or four hours, will produce the desired effects.

The advantages of Elixir Salicylic Acid Comp. are afforded by the combination of Salicyclic Acid with Soda in excess, thus forming a salt less corrosive and irritating and more readily borne by the stomach.

The other ingredients possess advantages well known to the Profession to whom this preparation is alone introduced, we therefore suggest the propriety of specifying "Warner & Co.'s" and ordering in 12-oz. quantities, to obtain original bottles.

It is a matter of great satisfaction to us to be able to place before the Profession a remedy so effectual in the cure of one of our most stubborn classes of disease.

Elixir Salicyclic Acid Comp. is put up in 12-oz. square blue bottles, with prescription label on it, and may be obtained from Druggists everywhere. See that no substitutes are offered.

HARTSHORN'S SELF-ACTING SHADE ROLLERS

NOTICE SCRIPT NAME OF Stewart Hartshorn ON LABEL, AND GET THE GENUINE

HARTSHORN

SWIFT'S

CHOICE

CHICAGO DRESSED BEEF

AND

MUTTON

Can be found at all times in full supply and at popular prices at the branch houses in all the larger cities and is RETAILED BY ALL FIRST-CLASS BUTCHERS.

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SWIFT AND COMPANY,

UNION STOCK YARDS,

CHICAGO, ILLS.

FEED THE BABY

In cases of diarrhœa, dysentery and cholera infantum, on Burnham's Clam Bouillon. There is nothing like it for ailing children It is far superior to any of the so-called infant foods, and is as nutritious as mother's milk. We receive letters of commendation daily from mothers and physicians recommending it as an infant food. Take two teaspoonfuls of soft water and a half pint of milk, boil, serve moderately warm, using an ordinary nursing bottle

BURNHAM'S CLAM BOUILLON.

Never Buy Clam Bouillon for the sick, except in Glass Bottles.

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25c., 50c. and $1.00
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AMERICAN ANALYST.

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A LOSS AND ITS MORAL.

The death of Professor Tyndall removes a man who has exercised a great influence in his generation—an influence always used on the side of knowledge and light against the forces of indifferentism and obscurantism. His training as a physicist confirmed in him a love of clear statement and a hatred of half truths. He possessed to a high degree the critical faculty, and, like all great critics, he was much more happily engaged in introducing to the world some new truth, than in gaining cheap applause by exposing the fallacies of a pretender. He early won the ear of the public and held it for a generation. Never was this great power abused to further an unworthy object. His interest in science was catholic, and by no means confined to his own special subject of experimental physics; it is particularly for his recognition of the significance of the early work in what is now the science of bacteriology that biology in general and medicine in particular are indebted to him. He familiarized the public mind with the practical importance of the epoch-making researches of Pasteur and Lister, and was one of the first to recognize, after making the perusal of Koch's paper on anthrax, that a new laborer of the highest order of merit had begun his work. It is grievous to think that the end of such a man has been hastened by an accident which would not have occurred if he had not fallen into the perilous habit of seeking sleep by the use of hypnotics. It is to be feared that this disastrous habit is becoming increasingly prevalent among the more intellectual classes of society. Public catastrophes or private whisperings are continually making us aware that some other man of more or less distinction has become the victim of some hypnotic for the relief of insomnia. We have no hesitation in saying that ninety-nine doses out of every hundred of these hypnotics which are taken are absolutely unnecessary. No man, whether he be a man of letters, or a man of science, or a physician himself, is a judge of the question of necessity in his own case. It is absurd, or worse, to assert that any hypnotic is safe, often and boldly as such assertions are made; all are dangerous, and as has been so sadly proved in the case of this distinguished man of science, a dose which at one time may be apparently innocuous in another state of health may be actually fatal. Insomnia is not a disease, but a symptom, and it is the clear duty of every sufferer to ascertain the cause, which with resolute will and patient investigation may always be discovered and removed.

PURE FOOD.

A cotemporary copies the following, crediting *Exchange* with the article. There is so much good common sense in the article, right along the line we have been arguing on, we reproduce it as we found it:

No less than six or eight pure food expositions are scheduled in as many different cities, to take place between now and spring, showing conclusively the great demand for food products of a higher, purer quality. Everywhere they have been held so far, the pure food shows have been successful. This would not be the case if the people were not interested in the subject.

The country is tired of the impure abominations that have been sprung by unscrupulous manufacturers during recent years and the dealer or manufacturer who wants to win a place in the hearts of the people to-day must send out only food products that are above question.

There is still a great deal of fraud in this matter of foods. In order to increase their profits, unscrupulous manufacturers use cheap materials. Canners use coloring matter and cheap tin. Cracker and cake bakers use cheap flour, cheap butter, cheap eggs, of uncertain vintage, cheap flavoring extracts and employ cheap labor—all of these things of course produce cheap food products, and as a consequence we see advertisements of dealers, frequently, offering canned goods and cakes and crackers and other things too numerous to mention, at prices less than the actual cost of manufacturing these goods in a pure, wholesome manner.

The remedy? Well first of all, dealers must make it a point to handle only goods that they know to be absolutely pure. The best advertisement that a retail grocer can have is to be able to say that his stock is composed of perfectly pure health goods and the grocer who gets the reputation for doing business on that plan is the one who will come out on top. Cheap John, clap trap business men succeed for a time but it will prove disastrous in the end.

When you buy goods buy from manufacturers who have a reputation for making only health foods. Don't handle inferior goods because they are cheap, or you can make a little better profit on them, and if you have now on hand canned goods, crackers, cake or groceries of any kind that you know are not up to the standard, be honest with yourself and your customers, send them back and order goods that are above reproach.

NOTES AND QUERIES.

We are desirous of making this column of service to our subscribers and wish to have them feel at perfect liberty to ask any question that may occur to them. We will be pleased to take great pains to obtain any information we may not have. If not of general interest we frequently answer these questions by mail.

For want of space, or time to investigate, many questions received remain unanswered for some time. Each query on any legitimate subject will in its turn receive proper attention. Correspondents are requested to write plainly and state their wishes concisely.

B. J.: What is the truth about the action of coffee and tea upon digestion?

A.—Coffee and tea contain several active principles; the most important of these are, first, caffein, which raises the activity of the heart, operating in small quantities as a wholesome stimulus, but as poison when taken in excess; second, an aromatic substance which operates principally on the nerves as an agreeable stimulus when taken in small quantities; third, tannin, to which is due the bitter taste. The quantity of each of these principles present in coffee and tea vary according to the method of preparation. If the coffee or tea is simply infused in boiling water but not boiled we get but little caffein, a great deal of aroma, and very little tannin. If boiled, the aroma passes off in the steam, we get more caffein and the longer it is boiled the more tannin is dissolved out. Therefore boiled coffee or tea prejudice digestion while a simple infusion helps it; this help does not come from chemical action, but from the physiological effects of the stimulus to the gastric nerves, promoting the secretion of gastric juice. The practical lesson is that to get the caffein without the aroma, boil the coffee, but never drink boiled coffee or tea after a meal, because it hinders digestion, and it is not helpful at any time, because of the tannin dissolved out by boiling, tannin acting as an astringent. The practice of keeping coffee or tea on the stove is a pernicious one.

E. K. H.: I also am interested in the cocoa question started in the January 15 number. I was imposed upon in the same way in ——'s store. What have you learned further about it?

A.—We are not yet ready to report. Our laboratory is working hard on the cocoa analyses. The consumer generally knows what he wants, and by insisting on having a brand which he knows to be good, can generally compel his grocer to supply it, and therefore need not be compelled to take other and unknown brands to experiment with. All we say is, stick to well-known brands.

CANNED VEGETABLES.

REPORT OF INVESTIGATIONS AND ANALYSES.

BY K. P. M'ELROY AND W. D. BIGELOW.

[Continued.]

COPPER-GREENING IN FRANCE.

The next appearance of the question is due to MM. Bouchardat and Gauthier, who were appointed a commission to investigate the general subject of the artificial coloring of articles of food and drink, and the dangers resulting therefrom, by the organizing committee of the International Congress of Hygiene, which met in Paris in 1878. That portion of their report as delivered to the congress which deals with the subject of artificial greening of preserved vegetables is as follows:

"The packing of canned vegetables may be called a French industry. Twenty to twenty-two million packages (demi-boites) of peas, green beans, flageolets, etc., are annually packed, 90 per cent of which are exported.

"Cooper-greening of these vegetables has been in use for twenty-five to thirty years and is practiced by nine-tenths of the packers. It originated in the observation that vegetables cooked in copper kettles preserved their color.

"The copper absorbed is deposited in the outer layers of the vegetables, forming a blue albuminate. The color of this deposit, mixed with the yellow produced by the cookery in the vegetable, forms the green tint so much desired.

"We believe that copper acts largely by virtue of its antiseptic and antifermentative properties, opposing the action of diastase which would tend to destroy the chlorophyl. To confirm this we may cite the fact that metals giving colorless albuminates also preserve the color. This is true with zinc and mercury.

"Legumes preserved by the copper process always contain this metal, sometimes in notable quantities and sometimes in mere traces.

"Nine-tenths of the preserved green vegetables sold in France or foreign countries are greened by copper. The process is in use at present in Germany, Italy and Spain. By virtue of a general understanding, every can of legumes sold in France and not bearing the inscription 'Legumes au naturel' is known to be greened with copper.

"There are, however, other processes in use.

"Coloring by a lake of chlorophyl is one, the process in which the lime sucrate is used is another, the Garges method a third, and, finally and lastly, zinc salts are sometimes used.

"In the first-named process, chlorophyl is extracted from spinach or nettle with caustic soda, precipitated in the form of a lake by potash alum, this dissolved in sodium phosphate and the legumes plunged into the hot solution, from which they take up the coloring matter. This process was patented in 1876 by MM. Lecourt and Guillemare, who amended it in February, 1877, by proposing to replace the alum by soluble lime and magnesium salts. Coloring by this process is irregular. Some packages contain legumes which are of a good green color, but with others this is not the case. Furthermore, the vegetables thus prepared have lost their own delicate flavor to assume that of the nettle, or, worse, that of the spinach, which served as a source of chlorophyl. Besides all this, the method is long and delicate and difficult of execution. Again, the goods do not keep well, and the cans are liable to explode, from internal fermentation.

"The calcium sucrate method was patented August 8, 1877, by MM. Possoz, Biardot, and Lecuyer. They add to the can, before final cooking, a liquid composed of 100 parts water, 3 parts sugar, 1 part sea salt, and 0.4 parts lime, with the idea of precipitating a comparatively stable lime lake in the tissues of the vegetable. The process gives variable results and has yet to stand the test of time. The color of goods thus preserved is yellowish green.

"Garges' patent was taken out September 4, 1877. He treats the vegetables first with sodium carbonate, then with alum. The results are unsatisfactory.

"The zinc process is still kept a secret, but in principle it consists in substituting zinc chlorid for the copper sulphate used in the common process. It is in use by one of the large factories. Vegetables treated by it assume a green tint or a natural yellowish green, but do not assume the French green, which the consumer unhappily associates with these goods. This method of greening in our opinion should be suppressed, since zinc is a substance whose presence in food in quantities as large as those in which copper is customarily employed, can not be tolerated without risk to public health.

"The liquor which surrounds the canned green peas, beans, etc., ordinarily contains no copper. In some factories, however, it is a custom to add a little copper sulphate to it, which is a reprehensible practice. The copper in the legumes is not soluble in boiling water, but if artificially digested, copper passes into solution.

"A part of the copper disolved in digestion is absorbed and part passes into the excrement. It is necessary to consider the effect of the introduction into the system of small and repeated doses of a metal reputed to be dangerous. In France, the Conseil d'hygiene, consulted upon this point, has not hesitated to condemn the use of copper salts, and the administration has accordingly taken measures to prevent it.

"The salts of copper are poisonous; they are violent emetics. It is not easy, however, to poison an animal capable of vomiting. Numerous experiments show that a dog or even a man can swallow daily several drams of acetate, sulphate, phosphate, or iodid of copper without experiencing any greater discomfort than a temporary colic or fit of vomiting. However, it is not known whether small doses taken daily can cause even these slight symptoms.

"Copper colic is described by some writers, admitted in rare cases by others, and by most authors totally denied. To-day it may be said that it is admitted to be an unimportant phenomenon. Workers in copper absorb the metal directly by contact and also in the state of dust. Often they become so saturated with it that their eyes are turned green and the urine contains it. Galippe and his family lived for more than a year on foods prepared in copper vessels and suffered no bad results.

"It would seem that in doses in which the metallic taste is not perceptible and in which there is no emetic action the indigestion of copper salts leads to no immediate inconvenience; but it also seems that a longer experience and more rigorous observation of statistics is necessary before the absolute innocuousness of oft-repeated small doses can be declared. It appears a logical conclusion that the introduction of copper in the greening process is to be viewed with suspicion, and therefore prohibited; but this conclusion would have less weight were it shown that copper existed in equal quantity in any of the usual foods of which experience has shown the innocuousness.

"The quantity of copper found by different chemists in various samples of peas, beans, etc., varies widely, running all the way from 20 to 222 mg of copper per kilo, this being a tolerably wide range. In many instances more was found than was requisite for coloring purposes. The results would probably have reached a higher figure had 'haricots verts,' 'ecossees,' or 'flageolets' been added to the list of those samples examined. The variations may be partly due to the different absorbent powers of the different vegetables. It is also due in part to the blameworthy practice of some canners of introducing a small quantity of copper sulphate into the liquor in the can before sealing. Pasteur found a maximum of 100 mg of copper per kilo of vegetables (after pouring off the juice); Bussy found 10 mg; Galippe, 60; and Carles, 210 mg.

"In the course of our own work on this subject we wished not merely to determine the copper, but also to answer the serious question whether lead is introduced into the animal economy by means of the tinning and solder habitually employed by the canners.

"The maximum amount of tin found was 71 mg; of lead 7.7 mg per kilo. It may be said of tin, as of copper, that its action on the animal economy is uncertain in such small doses, but in the case of lead, even the small portions found in the vegetables examined must be regarded as a serious matter. The source of lead is generally the solder. In making a tin can there are left three lines of solder, one at each end and another down the center of the can. Pieces of solder are also often dropped in in sealing the can, and this increases the danger. The solder consists of two parts lead and one part tin. A further aggravation of the danger existing from these sources is found in the employment of cheap tin plate, the cheapness of which is in direct ratio to the amount of lead found in the tinning alloy.

"Action on this matter is strongly urged, and the following addition to the ordinance of 1853 (that relative to the use of copper vessels) is suggested:

"'The use of lead, of zinc and of galvanized iron is forbidden in the manufacture of articles destined to contain alimentary substances or for drinking vessels.'

"The claims urged by the canners in defense of the practice of coppering may be summed up: The practice has existed twenty-eight years; it is used with 95 per cent of the legumes preserved and no accident has happened from their consumption in the history of the industry. The laborers employed in the canneries consume them in large quantity for several months in the year with entire impunity. The consumers prefer green vegetables to those *au naturel*. The demand both at home and abroad for those brands prepared with copper almost to the exclusion of the others, proves that they are not only safe but more pleasing, and it is this demand which has little by little universalized the practice of greening. If the manufacturer does not put copper in, the cook will and it is better that it should be added under the strict surveillance which an extended industry demands than that it should be left in incompetent hands. The addition of too much copper is impossible. The bad taste resulting from too large a dose furnishes sufficient guaranty against its use. It is true that legumes not coppered will keep indefinitely, but they gradually contract a slight taste of the can, become yellow in cooking, and are little sought for. France has almost exclusive control of the industry.

"Such are the principal arguments of the canners.

"As regards the consumption of coppered vegetables in the canneries by the workmen, those questioned by the commission denied that they ate the goods to any extent, averring that they soon acquired a distaste or even a repugnance for articles of food which they are called upon to handle so much.

"It is true that no accidents are recorded from the use of small quantities of copper. However, its effect is uncertain, and although modern work shows that it is infinitely less dangerous than has been supposed, yet the hygienist can not in the name of science declare it innocuous in every dose, nor pronounce otherwise than 'if in doubt, abstain.'

"As for the rest can any one answer for the ignorance and negligence of the workmen, the indifference of the canners, caprices, temptations, etc.? Has it not just been shown that some introduce salts of copper or leave an excess of sulphate of copper in the liquor which bathes the legumes in the can? The consumer prefers them greened, it is said. These products are a luxury; they are set on the tables of the rich and in hotels and restaurants, where they can be made to pass for the fresh product. That is the secret of their demand. It does not follow that the consumer, even if he has learned to prefer green peas to yellow ones, should prefer them greened by copper. His satisfaction rests upon a deception—to say 'green peas' is not to say 'peas greened by copper.' Greening offers no advantage in the process of preserving. If it preserves the aroma it slightly alters the taste.

"Nothing can hinder the greening industry from extending into Alsace-Lorraine, Italy, Greece, Spain, or any other country where the same vegetables are well and cheaply grown. The processes of greening with copper are no longer secret, but familiar in all their details. Only the perfection of the French products may enable a large part of the ancient custom to be retained. It is for the manufacturers who do not use copper to make known by all means and especially by their labels the preference to be given to products prepared without the use of copper salts.

"Foreign nations are already aroused upon this point. In Germany, Switzerland and England, analyses are made and prosecutions commenced. Very soon the houses and even the countries which practice the use of copper salts will find themselves in bad repute.

"In conclusion, taking into account the quantity of copper existing in the animal organism, and in many articles of daily food, sometimes in larger quantities than in copper-greened preserves; considering that recent works seem to show that feeble doses of this metal are not dangerous, but that absolute innocuousness has not been shown for small but oft-repeated doses; interested as we are in the industry of preserving foods, an industry whose methods cannot be completely transformed in a day; we recommend, without approving the principle of greening with copper, to tolerate temporarily the use of copper up to a certain limit.

"This limit is placed at the smallest amount of copper which investigation has shown to be sufficient to impart the desired color. It appears to be 18 mg per kilo of peas or other vegetable taken without juice, or 6 mg per can (demi-boite). The amount is slightly more than is found in farinaceous foods, but less than the amount contained in chocolate.

"It is advisable to prosecute canners who use larger proportion of copper, or who use zinc or any other metal.

"It seems also advisable to allow this temporary and limited toleration in order to gain time for the investigation of new methods which can be successfully substituted for those in general use to-day.

"The introduction of lead solder into alimentary substances preserved in cans made of tin plate has given rise to poisoning. The custom is to be deplored. Manufacturers are urged to substitute other means not involving the use of other materials proscribed by law and not constituting serious danger to public health."

The report of this commission was adopted by the Congress.

[To be continued.]

HOUSEHOLD.

TESTED RECEIPTS.

Every receipt here given is original, has been practically tested by the AMERICAN ANALYST and is therefore confidently recommended.

BEEF SOUP (BROWN).

Put three pounds of beef that has been cut into strips in a saucepan with three quarts of water and boil one hour, meanwhile slice three onions and fry them in butter to a light brown. Drop into the pot with a teaspoonful of cloves, half as much pepper, same quantity of mace as pepper, a pinch of allspice and a teaspoonful essence of celery, if fresh celery cannot be had; also half teaspoonful powdered curry or sweet marjoram, and a teaspoonful Worcestershire sauce. Stew all for two hours more, or until the meat has boiled to pieces. Strain the soup, return to fire. Salt to taste, and just before taking it off pour in a glass of brown sherry or Madeira wine.

BAKED SALMON.

Wash and wipe dry, and rub with pepper and salt. Some add a little cayenne and powdered mace. Lay the fish upon a grating set over your baking pan, and bake, basting it freely with butter, and, toward the last, with its own drippings. Should it brown too fast, cover the top with a sheet of white paper until the whole is cooked. When it is done, put on a hot dish and cover closely, and add to the gravy a little hot water thickened with arrowroot, rice, or wheat flour—wet, first with cold water—a large spoonful light tomato sauce and the juice of a lemon. Boil up and serve in a sauceboat. A glass of sherry improves the sauce. Garnish the fish with alternate sprigs of parsley and the bleached tops of celery, with bits of firm currant jelly here and there.

LOBSTER CROQUETTES.

To the meat of a well-boiled lobster, chipped fine, add pepper, salt, and powdered mace. Mix with this one-quarter as much bread crumbs, well rubbed, as you have meat; make into pointed balls with two tablespoonfuls of melted butter. Roll these in beaten egg, then in pulverized cracker, and fry in butter or very sweet lard. Serve dry and hot, and garnish with parsley.

BROILED SQUABS.

Clean, wash, and dry carefully with a clean cloth; then split down the back, and broil like chicken. Season with pepper and salt, and butter liberally in dressing them. Serve with currant jelly.

POTATO CROQUETTES.

Season cold mashed potato with pepper, salt, and nutmeg. Beat to a cream with a tablespoonful melted butter to every cupful of potato. Bind with two or three beaten eggs, and add some minced parsley. Roll into oval balls, dip in beaten egg, then in bread crumbs, and fry in hot lard.

SCALLOPED CAULIFLOWER.

Boil until tender, clip into neat clusters, and pack the stems downward in a buttered pudding-dish. Beat up a cupful of bread crumbs to a soft paste with two tablespoonfuls melted butter and three of cream; season with pepper and salt, bind with a beaten egg, and with this cover the cauliflower. Bake in the oven until a delicate brown; serve in the same dish.

FRUIT BREAD PUDDING.

Soak three large cups of fine bread crumbs in a quart of milk, then beat in one cup of sugar and three eggs that have been whipped light, half a cup of powdered suet, a little salt, nutmeg, and cinnamon. Stir two teaspoonfuls cream tartar into the dry bread crumbs. Whip the latter very light and add half a pound of raisins, seeded and cut in two, half pound of sultana raisins, washed well and dried, and a tablespoonful of shredded citron that has been well dredged with flour, and lastly a teaspoonful soda dissolved in hot water. Beat well before putting into a buttered mold. Boil two hours, keeping the water boiling hard all the time. Serve with sauce.

MANY USES OF WASHING SODA.

Tinware may be brightened by dipping a damp cloth in common soda and rubbing it well.

Very hot soda in a solution, applied with a soft flannel, will remove paint splashes. Use soda in the water to clean paint and glass instead of soap.

Strong, tepid soda water will make glass very brilliant; then rinse in cold water, wipe dry with linen cloth.

Ceilings that have become smoked by kerosene lamps may be cleaned by washing off with soda water.

For cleaning oil paint before repainting, use two ounces of soda dissolved in a quart of hot water. Then rinse off with clear water.

A lump of soda laid on the drain pipe will prevent the pipes becoming clogged with grease; also, flood the pipes once a week with boiling water, in which a little soda is dissolved.

Wash white marble porches, bath, etc., with a mop dipped in boiling hot water and soda. A good deal of soda should be dissolved in the water.

A generous pinch of soda in the dish water saves soap; the dishes dry easier, have a better lustre, and there are no greasy settlings on the dishpan. In cleaning greasy pots and pans, or sinks and drain pipes, hot salsoda water is not only cheaper, but more efficacious than soap.

Never wash raisins that are to be used in sweet dishes. It will make the pudding or cake heavy.

TO MAKE A PIANO DANCER.

Draw or cut from a picture card a little figure not more than two and one-half inches high. If you draw one, this will serve as a guide.

Take an old toothbrush, and, after breaking the handle off, split the brush apart in two pieces. Take one of these pieces, bend the base of the figure back, and glue it on with the back of the brush.

When this is placed on the sounding board of a square or grand piano, and loud music played, the dancer will move around in time with the music.

A CUTE IDEA.

A new idea is that of a figure on the floor to prevent a door from blowing or swinging shut. A moderately small bottle is filled with sand and tightly corked. A negro doll's head is then fitted on and a print dress made to reach the floor. A white apron is tied about the ample waist, and a small square crossed over the body in fichu fashion and knotted behind. A bit of gay cloth is wound around the head in bandanna fashion. The sleeves of the dress may be held out with sticks, or, better, sew a strap of cloth firmly around the bottle at the proper place, and to this sew arms that may be taken from a discarded doll. A bit of black varnish will give the desired dark hue. Thus tricked out, "Little Dinah" takes her stand and faithfully fulfills her mission of door guardian.

HYGIENIC.

CLEANLINESS BRINGS HEALTH.

Recently we read a very entertaining and instructive article from the New York *Times*, in which was described the method of cleaning the city of Paris, France. In that beautiful city they do not rely upon the sweeping machine and dump cart for cleansing the city; but they flush the gutters two or three times a day, and do it so thoroughly that the refuse of the streets and avenues is carried into the sewers, and borne away beyond the limits of the city. It is this care of the city that has given Paris such a reputation for cleanliness, beauty and health. It costs the people of that city on an average seventy-five cents a year for each inhabitant to keep the city clean. This in the aggregate amounts to a large sum, but it is not as much for each one as a bottle of patent medicine would cost. It is not one-half the sum required to pay for one visit of a physician. Paris gains in the health of its citizens many times the cost of cleaning the city.

If the great cities of America would institute similar thorough methods in cleaning their streets and avenues, the average health of our country would be greatly improved. The life of our citizens would be prolonged, and the comforts of life multiplied and intensified. A wise policy for a city administration would be to cleanse the city at any cost. It is just as essential that we should have clean homes and streets as it is that we should have clean food and clean water to drink. In fact, without clean homes and clean streets, it is impossible to have clean food, pure air, or pure water.

No better time was ever known for the inauguration of a policy of cleanliness than at the present. The recent ravages of cholera in Europe, and the danger of its entry into this country, have awakened people to the importance of providing against it. They would be willing to assist in carrying out an intelligent cleansing policy by reason of their anxiety to ward off the disease and turn aside the messenger of death.

It is to be regretted that an appeal to people in behalf of the common decency of cleanliness is urgently necessary in the closing years of the nineteenth century. Cholera is but one of a great many diseases that dirt and filth and neglect engender. It comes but once or twice in a century, while no city in America is free for one day in the year from many enteric diseases that carry off many thousands from among our people. Looked at from the sanitarian's point of view, cleanliness is not only next to godliness, but it *is* godliness. For, whatever gives health to the body gives vigor of intellect and soul; and he who is vigorous in his mind and heart worships better, lives better, and acts nobler. Let us, therefore, be clean.

CONTAGION FROM KISSING.

A telegram from Jamestown, N. Y., says that at a wedding in a village near that place a number of friends kissed the bride, who was suffering from slight sore throat at the time. Since the wedding the case has been found to be one of diphtheria, and a large number of those who embraced the bride when offering their congratulations have been attacked by the disease. No deaths have yet occurred, but many of the cases are said to be serious.—*New York Medical Record.*

DANGERS OF CAT-KISSING.

The ladies who with perverted affection kiss their cats and lapdogs may be interested in learning the results of Signor Fiocca's examination of the saliva of these animals. That of the cat is especially rich in all sorts of minute bacilli, and contains a new form seldom absent, and so fatal that rabbits and guinea-pigs inoculated with it died in twenty-four hours. The dog's saliva contains an even greater number of bacteria, some of them of a particularly disagreeable character, plus occasional flukes and the eggs of intestinal worms. Nor is the horse free from these death-dealing organisms, for among the diverse "bacilli, streptococci and spirilli," in its saliva were three forms of a noxious description.—*London Chronicle.*

MEDICAL.

HEART FAILURE.

BY J. W. MADDIN, M.D.

[Read before the Nashville Academy of Medicine.]

Gentlemen:—In the discussion of heart failure —a subject of interest, equally to the laity and the profession—which was given me a few days ago as my part of the evening's entertainment, I shall not undertake to individualize diseases by name, description, symptoms or treatment, in which this result occurs; but, if I may say anything worthy of your attention in the brief study given the subject, it will be in explanation, with the present light of physiology, of the philosophy of the causes of heart failure as I understand the subject; how they are brought about and through what channels they occur. If I appear somewhat tedious, I will promise you to be brief, and that whatever material is in the foundation is necessary to the superstructure built upon it.

Nerve elements present two distinct forms: 1. Nerve fibres; 2. Nerve cells. An aggregation of nerve cells constitutes a nerve ganglion.

Nerves possess the property of being thrown into a state of excitement by stimuli, and are therefore said to be excitable or irritable, and these stimuli may be applied and may act on any part of the nerve.

Stimuli are of various kinds—i.e., mechanical, which act by pressure; thermal, produced by high temperature without or within the body; chemical, produced by acids, alkalies, or septic matter; electrical, such as are produced by an inductive shock; physiological, those resulting from normal blood supply.

These various stimuli enter into the causes or prevention of heart failure.

When a sensory nerve is stimulated, pain is produced. When a motor nerve is stimulated, motion results in the muscle to which the nerve is distributed.

If the continuity of nerve fibre is destroyed, the conduction of impulse across the stimulated part is interrupted.

If the molecular arrangement of the nerve be permanently deranged, for example, by a violent shock or by disease and action, the excitability of the nerve may be thereby extinguished, and in these physiological and pathological facts lie the explanations of the law governing heart failures.

The higher the temperature in fevers, the greater the excitability and conductivity of nerves, until spasm may occur; but the result of long-continued high temperature will exhaust and kill this power, and result in heart failure.

The continuance of the normal excitability in the nerves of the body depends upon the maintenance of normal nutrition of the nerves themselves by a supply of good blood. Insufficient nutrition first results in increased excitability; but if this condition continues, excitability is diminished. So when a physician meets with the signs of increased excitability of the nerves under bad or abnormal conditions of nutrition, this is the beginning of the signs of decrease or failure of nerve energy, which keeps the heart in motion, and invigorating measures are required, to prevent heart failure.

Nerve fibres possess independent excitability, and the result of stimulation depends on the structure in which the nerve fibre ends—if in a muscle, motion results; if in a gland, secretion; if in the brain, sensation.

If the sympathetic nerve has full, unrestrained play, it will spur and whip the heart into such rapid action that, by its chemical katabolic power, will destroy the natural function, the power of contraction in the heart—literally tire the heart to death, as a jaded animal may be whipped and spurred to death by its rider; or else, as another result, by the rapidity of its action, produce spasm of the muscles of the heart, with resulting heart failure and death.

On the other hand, the inhibiting power of the *vagus* nerve over the heart's action, unbalanced by the sympathetic, will slow and finally stop the heart's action, and produce death just as certain and more quickly than the accelerater can spur its movements on to exhaustion.

So, in the loss of correlation between the sympathetic, accelerating moving nerves of the heart and the inhibiting, retarding, slowing nerves of the heart, ganglia lies the solution of the problem of many heart failures.

When there is chronic congestion of the abdominal organs, a proper supply of blood may be kept from the nerves of the heart so as to produce slow or rapid syncope, which is heart failure. Again, still ascending in the philosophy of the cause of heart failure, all three of these great nerve centres, the cardio accelerator, the cardio inhibiting, and the vaso-motor, not only blend their fibres in the medulla oblongata—the great Mississippi, gathering into its bosom the nerve currents of the whole body—but all these nerve centres mingle there in intimate communion and sympathy with nerve currents from the emotive centres of the brain; the seat of emotional nature, whence arise and through whose combined centres in the medulla courses the sentiments of joy or anger, which may flush or crimson the cheek; or fear, which may blanch or pallor it; or calamity which may so appall the heart as through these emotive centres, acting through the cardiac ganglia, produce immediate heart failure and death.

It will be impossible, in the short time allotted to the opening paper, in a short summer evening, to touch the subject except in a general and brief way, for it grows in interest, importance and magnitude the further our researches go into it. We cannot individualize diseases or conditions with descriptions of them, their symptoms, or the exact manner in which they produce death from heart failure; but, in concluding this imperfect and hasty paper, I will state some general principles:

Whatever produces unhealthy structure of nerve fibres, nerve cells, or nerve ganglia, or the tissues to which they are distributed and upon which they act, preventing normal impulse, which regulates automatic and reflex movement, such causes as reside in healthy sanguification, producing degeneration of tissue, especially heart tissue, or tissue of blood vessels which nourish the heart, are potent factors of heart failure.

Whatever stimuli, mechanical tumors, abnormal elelements of the blood, chemical poison, or other causes which produce pressure or undue irritation upon nerve tracts, nerve cells or ganglia of the heart, impairing healthy metabolism and normal impulse, are causes of heart failure.

High temperature of the atmosphere, combined with conditions predisposing to sunstroke from without the body, or high temperature of the body from fevers, producing heat stroke from within, paralyzing sympathetic and vaso-motor power, determining blood flow to the cavities of the body, and giving full play to the inhibiting power of the vagus, will slow, still and stop heart action.

Finally, whatever of the nature of shock, whether from a blow without the body, or equally through a subtle blow to the emotional nerve centres of the brain, whether through grief or fear, or anger, or other emotion which produces molecular change in the nerves leading from distant organs of the body or from emotional brain centres through the medulla oblongata where these fibres, cerebral, vaso-motor, sympathetic, and inhibitory commingle, will if paralysed produce that most sudden, irremediable and quickly fatal of all heart failures.

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ARRANGEMENTS FOR THE ELEVENTH INTERNATIONAL MEDICAL CONGRESS.

Professor Jacobi wishes to notify physicians that a letter directed to him by the secretary-general of the Eleventh International Congress and dated December 19, 1893, contains the following communications:

"American members will pay on the English, French and Italian railways single fares for double journeys, and will obtain a reduction of 20 per cent on fares for Italian round-trip tickets.

"The documents required for their identification will be sent to you in January, and Americans intending to visit the Congress will have to apply to you for them.

"Full particulars concerning the journeys will accompany the documents.

"Messrs. Thomas Cook and Son, London, Paris, Rome and Naples, should be applied to for accommodation and for tickets for the excursions at Rome, Naples, and to Sicily. Such excursions will be arranged at Rome under the guidance of Mr. Forbes, member of several scientific societies and correspondent of the Times—for Naples, three days, including Vesuvius, Pompey, Capri, Sorrento, Castellamare, Bajae, etc.—for Sicily, ten days from Naples, including Messina, Taormina, Catania, Girgenti, Siracusa, Palermo, and return to Naples.

"The fares for members of the Congress will be considerably reduced and comprise hotel accommodations, carriages, guides, boats, etc.—about 70 francs each, for the three days, and 285 francs for the ten days,

"Full particulars concerning these excursions will be contained in a leaflet to be added to the instructions and documents for the journey."

From former communications the following are herewith quoted: The members' fee is five dollars, that of their wives or adult relations two dollars each. Checks or money orders may be sent to Prof. L. Pagliani, Rome, Italy. Credentials have been promised in the near future. When they arrive (none were received last year), they may be too late for many who have started or are about to start. The undersigned, who is not informed of the cause of delay, proposes to supply in as official a form as he thinks he is justified in doing, credentials which are expected to be of some practical value. The North German Lloyd has promised to recognize them. It is suggested, besides, that a passport may increase the traveler's facilities.

Only the North German Lloyd (22 Bowling Green) and the Campagnie Generale Transatlantique (3 Bowling Green) have thought fit to grant any reductions to Congressists.

The reductions on Italian railways are available from March 1 to April 30.

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THE RELATION OF FOOD TO MORALS.

The food that a little child eats has a two-fold influence; it may not only deprave the appetite, but cloud the intellect. It may do more than that: it may inflame the passions, and pervert the moral nature.

A clergyman who had thought much upon these subjects tells of a father who was sorely tried over his little son. The child was so obstinate and wayward that the father sought counsel of his minister. He asked what he should do with the boy. He had tried everything he could think of—moral suasion, entreaties, and he was about to resort to force, But nothing seemed to reach the case; the child was incorrigible. The good clergyman had evidently met such cases before. He asked the father how he fed the child; and he learned that its dietary was of a kind that would naturally overheat the blood and inflame the passions. He prescribed an entire change in the boy's food; instead of meats and gravies, rich pastries, and the like, he substituted plain bread and milk, with wholesome fruits.

A short time afterward he called, and asked as to the results. The father informed him that his son seemed entirely changed in his disposition; from being irritable, he had become docile. The congestion at the base of the brain had been relieved, and the intense nervous irritability no longer existed. To the father this sudden transformation seemed almost miraculous. To the minister it was all very plain; he had removed the cause, and the effect no longer followed.—*Demorest's Family Magazine.*

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STARCH AND INFANT FOODS.

The *Herald of Health*, speaking of the value of starch food, says:

"Many people suppose that such foods as rice, barley, potatoes and wheat, are innutritious, because of their containing a large percentage of starch; it is therefore as well to call attention, here and now, to the fact that an alimentary element is not an aliment any more than nitrogen, which forms four-fifths of our atmospheric air, is air. The starch of rice, potatoes or wheat, divided from the other constituents of those foods, is decidedly innutritious, indigestible, and, consequently, injurious. The element starch, disjointed from its co-factors, is not a food. It is a chemical substance, and might almost be denounced as a drug. But it is an essential factor as combined in an alimentary substance. The element nitrogen, if separated from its co-factor in the composition of the atmosphere, be breathed alone death is the result. On the other hand, denude rice, potatoes, wheat and such-like 'starch-foods' of their element starch, and the residue ceases to be a food, properly speaking. To continue the analogy, denude the atmosphere of its nitrogen and equally disastrous results arise. If our penal laws were consistent and advanced, the adulteration of foods with extracted starch would be treated as an attempt against the life of others for the purpose of obtaining money fraudulently. Such articles, used as foods, shorten life the same as though a slow poison were administered. If the latter process were successfully adopted by a wife, for the purpose of obtaining her husband's money, the law would hang her. But when a system of life-shortening is carried on wholesale by 'food manufacturers' the law is comparatively a dead letter.

"I recently heard of an infant who died 'in spite of every care being bestowed upon it.' The parents desired a post mortem examination. The intestines were found to be very much inflamed and simply 'pasted together.' The child had been fed on milk and on 'Infants' Food,' which no doubt was largely adulterated with added starch. This child was as distinctly murdered as though it had been intentionally poisoned. Moral: Avoid manufactured foods and buy your cereals as composed by Mother Nature who is honest in her laboratorial processes and has stood the test of some few generations. Hers is the real old original shop. Others are only fraudulent would-be imitators. None are genuine which do not bear her trade mark."

To this we have only to add that as we cannot all go to the original shop, those foods which are manufactured as near to Nature's formula as possible are the best. Such is Imperial Granum.

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INCUBATION.

Diphtheria, two to seven days; oftenest two,

Typhoid fever, eight to fourteen days; sometimes twenty-three.

Influenza, one to four days; oftenest three to four.

Measles, seven to eighteen days; oftenest fourteen.

Mumps, two to three weeks; oftenest three weeks.

Rubeola, two to three weeks.

Scarlet fever, one to seven days; oftenest two to four.

Small pox, nine to fifteen days; oftenest twelve.

Further investigations were made with regard to the time and duration of the infective period.

Diphtheria was found to be infective during the period of incubation, attack and convalescence.

Mumps and rubeola are also infective for three or four days before the onset of the parotiditis and appearance of the rash.

The contagiousness of measles speedily disappears, and does not continue in disinfected persons for over three weeks.

Typhoid fever is infectious from the time of onset until two weeks after the fever has gone and convalescence set in.

As is well known, the contagiousness of scarlet fever varies greatly, but is generally continued a very long time—certainly until desquamation ceases, and sometimes as long as eight weeks.

MONKEYS AND THEIR SICK.

Monkeys, with some notable exceptions, are some degrees worse than savage men in their treatment of the sick.

On the new Jumna canal, at Delhi, they swarm in trees upon the banks, and treat their sick in true monkey fashion. The colony by the canal, being overcrowded, and as a consequence unhealthy, did and probably does still suffer from various unpleasant diseases. When one monkey is so obviously ill as to offend the feelings of the rest, a few of the larger monkeys watch it, and, taking a favorable opportunity, knock it into the canal. If it is not drowned at once, the sick monkey is pitched in again after it regains the trees, and either drowned or forced to keep aloof from the flock.

THE TREATMENT OF WARTS.

Prof. Kaposi, of Vienna (*La Semaine Medicale*). recommends, when the warts are solitary, removal by the knife, but when multiple, and especially on the face, he employs the applications of thuya occidentalis, or fuming nitric acid. Vegetations are best treated by dusting with resorcin or salicylic acid or a plaster of 10 to 20 per cent. Resorcin, if applied for a long time, acts as a caustic, and may irritate the surrounding normal skin. These same topical applications are also excellent in keratosis palmaris and plantaris, even when they are not wartlike. In multiple warts of the face he employs the following:

Flowers of sulphur	gms. 20
Glycerine	gms. 50
Pure con. acetic acid	gms. 10

Apply locally to each wart.

They dry up, become bluish and drop off. Continue this for several days. In mollusciform nævi electrolysis is the best treatment, except when the tumors are voluminous, when the galvano-cautery or caustic may be used.—*St. Louis Clinique.*

ACTINOMYCOSIS CURED BY POTASSIUM IODIDE.

Dr. Meunier communicated to the *Paris Academy of Medicine* the history of a case of actinomycosis in man, the seventh on record in France, but the first treated and cured by the iodide of potash. The patient was a railroad engineer who had never lived in the country, and given the frequency of animal actinomycosis in Touraine, the disease must have been of alimentary origin. A cervical phlegmon first appeared, of greater consistency and hardness than are found in the ordinary phlegmons, and to which he proposes to apply the name of cervical actinomycotic pseudo phlegmon.

The results of the treatment by the iodide were so satisfactory that the author is tempted, after Thormassen, to consider potassium iodide as a specific in the treatment of the disease.

GUNPOWDER STAINS.

The bluish-black spots produced by gunpowder may be removed by painting with the following solution:

Biniodide of ammonium,
Distilled water,
Equal parts.

Then with dilute hydrochloric acid to reach the tissues more deeply affected.

CURE FOR A "BLACK EYE."

There is nothing, says the New York *Medical Times*, to compare with the tincture or a strong infusion of capsicum annum mixed with an equal bulk of mucilage of gum arabic and with the addition of a few drops of glycerin. This should be painted all over the bruised surface with a camel's-hair pencil and allowed to dry on, a second or third coating being applied as soon as the first is dry. If done as soon as the injury is inflicted, this treatment will invariably prevent the blackening of the bruised tissue. The same remedy has no equal in rheumatic, sore or stiff neck.

ADULTERATION.

ADULTERATION IN ENGLAND.

"WOOD" OR "GOOD" VINEGAR.

[From *Food and Sanitation.*]

At the Brentford Petty Sessions, on December 16, before Mr. Montagu Sharpe (in the chair). and other magistrates, John Putnam, green-grocer, of 62, Ealing road, South Ealing, was summoned for having sold to Mr. Walter Tyler, the Inspector under the Food and Drugs Acts for the Western Division of Middlesex, a quantity of vinegar containg 70 per cent of dilute acetic acid. Mr. Bartley Dennis, barrister, defended. Edward Watkins, Mr. Tyler's assistant, proved the purchase, on November 15, at the shop of the defendant of a pint of vinegar, for which he paid twopence. Defendant's wife supplied him. She told him it was not malt vinegar, but Sarson's. She also said that the vinegar was very good. She served him from a cask. He had previously noticed in the shop window a printed slip, "Excellent strong vinegar, 2d. per pint," and witness said he was certain Mrs. Putnam did not, after looking at the cask, say the article with which he was supplied was "wood" vinegar. Mr. Tyler, the inspector, in the course of his evidence, also said that the defendant's wife informed him that the vinegar with which his assistant had been supplied was not "malt" vinegar. On his replying that he supposed that it was vinegar, she said, "Yes; it's Sarson's." The certificate of the county analyst showed that the sample forwarded to him contained 70 per cent of dilute acetic acid not produced by fermentation, and 30 per cent genuine fermentation vinegar. In answer to a question, the inspector said he had purchased vinegar at as low a price as three-halfpence a pint, and vinegar bought by him at that price had been certified to be unadulterated. Defendant's wife never made use of the phrase "wood vinegar" in his hearing. The phrase "wood vinegar" would convey to his mind the impression that the article was something different from ordinary vinegar, but he knew nothing of such a vinegar. Mr. Edward J. Bevan, County Analyst for Middlesex, said "wood vinegar" was a perfectly harmless article of food and if a cask of it were labelled "wood vinegar" it would be properly described. The difference between malt vinegar and wood vinegar was that the former was more aromatic than the latter. Wood vinegar was a compound of acetic acid and water colored with something; it was manufactured from the distillation of wood, and was not at all deleterious. For the defence it was stated that Mrs. Putnam understood the inspector's assistant to ask for a pint of "malt" vinegar. She told him they did not sell malt vinegar at twopence a pint, but that they sold Sarson's "wood" vinegar at that price. A customer who was in the shop at the time remarked that this particular vinegar was very good. In answer to Mr. Tyler, the witness admitted that the label "wood vinegar" did not appear on the front of the cask. Mr. Otto Hehner, Analyst, vice-president of the Association of Analysis, stated that after a decision given at the Birmingham Quarter Sessions be had been consulted by Messrs. Sarson, and had advised them to label this particular description of article "wood vinegar," in order to comply with the requirements of the Food and Drugs Act. In reply to Mr. Tyler, the witness said he agreed with the county analyst as to the nature of "wood" vinegar. Mr. Bartley Dennis submitted that there was no case against his client; that the defendant's wife had informed the inspector's assistant that the article sold to him was "wood" vinegar; and that the inspector's assistant was mistaken in supposing that she said it was "good" vinegar. The magistrates were of opinion that the inspector's assistant had mistaken the word "word" for "good," and dismissed the summons.

PRESERVATIVES IN FOOD—ALLEGED POISONOUS EFFECTS OF BORAX.

The borax treatment of epilepsy has of late taken a great extension. It would appear, however, that the prolonged exhibition of a salt hitherto considered innocuous is not devoid of inconvenience to the patient, for M. Féré states that he has observed cutaneous troubles in such patients, consisting principally of seborrhœic eczema of the scalp. The hair is shed, but grows again when the administration of the borax is stopped.

CO-OPERATION AND ADULTERATION.

Herbert Marfleet, manager of the Supply Stores, Totland Bay, was summoned for an offence under the Food and Drugs Adulteration Act. Police-superintendent Coleman proved buying three bottles of sal volatile at the Stores, paying 1s. 6d. for them. Mr. Otto Hehner, who analysed one of them, reported that the sample contained but 70·6 per cent of the amount of ammonia required by the British Pharmacopœia. The defence was that the drug was a sealed packet, and it was impossible to know its contents. A correspondence with the firm supplying the article was put in, and suggested that the sal volatile had been in stock some time; the summer heat, no doubt, caused evaporation. The magistrate's clerk, Mr. J. W. Pardell, said notice had been given that the defendant had a written guarantee from the vendors. Defendant said the firm had written withdrawing the guarantee, as it was so long since the drug was supplied. The chairman said, that being so the defendant had no legal defence. He would be fined 1s., and 19s. 6d. costs.

At Brechin police court, on December 20, Alexander Guthrie Mowatt, publican, Church street, was charged with having sold to Sergeant James Collie whiskey which was adulterated by excess of water. The prosecutor, Mr. Smart, stated that the certificate which he had received from the public analyst showed that the spirit was reduced by an admixture of water to the extent of 34 degrees under proof. He was not, however, to ask for a heavy penalty being imposed, as it was the first case of the kind brought up here; but as there had been a good deal of expenses in connection with it, he thought there should at least be a penalty sufficient to cover these. While the magistrates were considering their decision, one of them asked the prosecutor the extraordinary question if notice had not been given the parties before the samples were taken, and whether such warnings were not given before taking milk samples. The provost, in disposing of the case, said that, as it was the first of the kind which had come before them, the penalty would be a fine of £1 to cover the expenses. The fine was paid.

COCOA ADULTERATION PROSECUTION AND MARGARINE PROSECUTION AT ROCHESTER.

At Rochester County Police-court, Messrs. Croft and Church, grocers, Northfleet, were summoned by Superintendent Lacy. Police-constable Payne stated that he went to the shop of the defendants, at the direction of Superintendent Lacy, and purchased a quarter of a pound of cocoa for 1½d. An assistant served him, and he told him that he had purchased the article for analysis, whereupon the young man put a label upon the paper in which he had wrapped the cocoa, stating that it was a mixture of wholesome ingredients. When he asked for the cocoa he did not fix any price. Superintendent Lacy stated that he followed the constable into the shop, and finding that he had been served, proceeded to divide the articles into three parts, one of which he left with the defendants, another he took to the County Analyst, and the other he now produced. The certificate he had since received from the Analyst showed that it consisted of 60 per cent of cocoa, and 40 per cent of starch and sugar. Mr. Cross, solicitor, of Bristol, instructed by the manufacturers, defended, and contended that the certificate was bad, as on the face of it was a reprint statement that a "change had taken place in the constitution of the article that would interfere with the analysis." Major Budden pointed out that cocoa was not a substance liable to decomposition. Mr. Cross: Admitted; therefore there was no necessity for such a statement upon the certificate. Superintendent Lacy showed a blank space was left which in another certificate was filled up with the word "No." The Bench stated that they had no doubt it was a slip on the part of the Analyst; but of this they would give the defendants the benefit and dismiss the case.

EXCESS WATER IN BUTTER.

Caroline Row, of Perranwell, was summoned at East Kerrier Petty Sessions, on December 27, for having sold to Superintendent Beare butter adulterated with 4 per cent of water. Mr. R. Dobell, solicitor, Truro, drew attention to the wording of the summons, which said that the butter was adulterated with 4 per cent of water, whereas the analyst's certificate contained the additional words, "4 per cent of water above the maximum allowed by the Somerset House authorities." He was informed the maximum was 19½ per cent, and genuine butter had been found to contain as much as 22 per cent of water. A case would be tried at Manchester next month before the High Court, which would bring the question of water adulteration to a satisfactory issue to all parties. Under the circumstances, the Bench adjourned the case pending the decision at Manchester.

At the Tipperary Petty Sessions, on December 22, Sargeant William Flynn summoned William Kiely, Jr., on a charge of exposing for sale in the Butter Market, Tipperary, butter adulterated with an over percentage of water for the purpose of fraudulently increasing the weight and bulk contrary to the Food and Drugs Act of 1878. The sargeant, who is the inspector in Tipperary under the above Act appointed by the grand jury, deposed that he purchased a quantity of butter from the defendant, and had it analyzed in the usual way. The certificate sent down by the Public Analyst was that it contained 3.05 per cent of water over and above the legal standard, which was 16 per cent. Mr. Hogan, solicitor, appeared for the defendant, whose wife was examined, and said the butter being very strong she had put extra pickle on it. A fine of 5s. was imposed, together with 7s. costs. Mr. Bell said these people were doing other people harm besides themselves, for they were giving the market a bad name. Colonel Tynte said Mrs. Kiely had better tell her husband he was liable to a penalty of £5, which would be imposed if he came up before the magistrates again.

HOW AUSTRALIAN MEAT IS PREPARED.

The winter months, which are our summer months, are the season of operations, the preserving process being, of course, more easily accomplished in the cool weather. At works situated on the Orara river, the season commenced in March, and up to the 20th of August upwards of 7,000 fat cattle were slaughtered. The cattle are purchased by weight, each carcass, when skinned and cleaned, passing under a steelyard, and the rates for this year were 10s. 3d. per 100 lbs. for best bullocks, 9s. 3d. for inferior bullocks or cows and 8s. 2½d. for old cows. The average daily slaughter was fifty bullocks or sixty cows. The meat is cut up in small pieces, boiled in soup in scalders, strained and tinned; and the tins when soldered are packed in cases of various sizes. The tins themselves are of various capacity, from 2 lbs. up, but 6 lbs. are the commonest size. The soup is reduced to extract by means of a series of condensing pans, and this finds a ready market in this country. From the caul and kidney fat about two tons of butterine is weekly turned out, and the bones, offal, and other refuse are boiled down for tallow, of which there are two grades. The shank and marrow bones go to England with the horns, hoofs, and tail hair; the other bones are sent to a drying shed, and in the slack season reduced to bone dust by a crushing machine at the works, and thus converted into a fine soil fertilizer. This year some corned beef has been tinned, but marrow and tongues have been treated in this way each season. There is a plant for the extraction of neatsfoot oil, and no portion of the beast is permitted to go to waste save the blood. The boning of the meat is done by contract, as is also the making of the tins, the company importing the tin plate from England and likewise the material for solder. The tinsmiths have a department of their own, fitted up with the requisite appliances peculiar to the trade. A cooper on the premises constructs the casks for tallow and butterine. A blacksmith's forge provides for the necessary ironwork and repairs, and the pine for the packing cases is cut at a circular saw bench at the works from logs that are obtained from a forest in the district some thirty miles distant. This is also a separate contract. The packing and shipping are also done by contract. In the season fully 100 hands are engaged, and the majority of them are housed in cottages that dot the hillside in the vicinity of the works. Three engines, varying in size from 10 to 15 horse power, drive the whole of the machinery needed for all operations, and, through the piping from the boilers, steam is conducted to heat condensers, retorts, scalder and butterine boilers, the whole of the pans being constructed on the "jacketer" system.

INVENTIONS, SCIENCE, ETC.

LIFE IN THE DEAD SEA.

It has been supposed that the waters of the Dead Sea are absolutely destitute of any living vegetable or animal organism. A French investigator, M. Lortet, has found that this is wrong. He finds innumerable numbers of species of micro-organisms, and they are of a very malevolent character. Animals inoculated die in a few days from the blood poisoning brought on through the agency of these minute bodies. The River Jordan, which is so popular with pilgrims for bathing, is said to be full of these micro-organisms.

WASHING THE SMOKE.

They have just been trying in Birmingham, England, an exeedingly smoky but not foggy city, an invention for washing the smoke and making it clean before it is turned loose in the air. The idea is not a new one, but in this application of it there are some novel features. As the smoke proceeds from the furnace to the chimney shaft, it is drawn away near the point of connection with the stack by means of a powerful fan revolving at a great speed. It is then forced through a cylinder making 280 revolutions a minute, into a tank filled with water. The water is agitated by perforated beaters, and this process has the effect of washing the smoke, which is then allowed to escape, perfectly purified, into the atmosphere direct, or is conducted back to the chimney. The carbon is precipitated to the bottom of the tank, and is brought out in a thick, bubbling, black froth, forming a deposit the worth of which is put at about $50 a ton, along with other by-products of an extremely valuable character. This device may be applied to factory furnaces, locomotives, steamboat engines, and, in fact, to all large furnaces. A company has been formed to work it, and there is a loud call for its trial in London.

LENGTH OF A SILK WORM'S THREAD.

In a recent communication to the Society of Arts and Sciences, Miss Henrietta Rhodes states that the silk unwound in a single thread from one cocoon of the common silkworm measured 404 yards. After this bunch of silk had been thoroughly dried and reeled, it was found to weigh exactly three grains.

It follows that one pound of silkworm thread may be extended into a line 535 miles long, and that a thread long enough to reach around the entire world would weigh no more than forty-seven pounds.

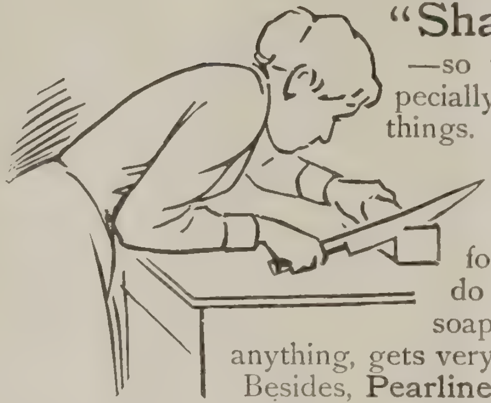
* * *

It often happens that a dog without teeth barks the most.

THE VICIOUS CIRCLE OF CONSEQUENCE.

There appears to be a constant increase in the number of preparations offered to the public, ostensibly for relief and cure of diseases of the nervous system which are the too common outcome of our high pressure existence. "Americans," it has been remarked "live faster than any other people in the world." And it is gravely suspected that if we do not also die faster, our rapidity at last gallops many of us to a point between which and such hasty finality there is not much to choose. That such is the fact does not demand the attestation of increase of our asylums for the insane, which has already far exceeded due proportion to the volume of population, and the alarming multiplication of cases of paresis. Without seeking such extreme demonstration, we may find just cause for sufficient anxiety in the enormously increased consumption of drugs for the relief of insomnia, to which any observant pharmacist can bear witness. Not alone have the public grasped and made reckless use of a vast amount of pernicious knowledge concerning chloral, chloralamid, sulphonal, urethrane, hypnone, methylal, paraldehyde, bromide of potassium and many other more or less dangerous and often deadly sleep-producers, but machines have actually been invented and largely sold for the compelling of sleep by mechanical reduction of the supply of blood to the brain. This is a very serious condition of affairs. Habitual insomnia is exceedingly apt to end in madness. It indicates a diseased and unnatural condition of the nervous system which cannot be counteracted by such temporary reliefs and is indeed only likely to be aggravated by them and hastened to an inevitably bad ending.

The only intelligent treatment in such cases is by restoration of natural healthful vigor to the enfeebled and over-excited nerves and such treatment must necessarily be constitutional. From the way in which many persons speak of their several departments of being, it really seems as if they were ignorant of the mutual inter-dependence of the "systems" conjoined in the body and imagined that one might be sick or well, treated or ignored, without reference to the others. Nothing could be more erroneous. The links of an endless chain of cause and effect run through the whole. Get your digestive apparatus out of order, and the assimilative will quickly feel the effects, then the circulatory will suffer consequent derangement, close upon which will follow affections of the nervous and these in turn will react upon each of the others. And the malady must be very trivial which does not set up this vicious circle of consequence. Radical measures are the only safe ones. Take care that your vital organs are properly discharging their functions and that the life current, upon which all are dependent for nourishment, is free from the obstructions of foreign or effete matter and the taint of disease. The best security one can have for this is afforded by Ayer's Compound Extract of Sarsaparilla which is justly esteemed in all parts of the world, as the best blood alterative known to curative science, a fame it has attained through half a century of demonstrated superiority over all other medicines compounded for like purposes. It is composed of the active principles of Honduras sarsaparilla, yellow dock, stillingia, and other alteratives in such just proportion and with such scientific and conscientious preparation as gives it the highest potency, with absolute safety even for infants. The medical profession generally accept it as a standard compound.



"Shave your Soap"
—so the soap makers say, especially if you're washing delicate things. Now, in the name of common sense, what's the use? When you can get **Pearline**, in powder form for this very reason, why do you want to work over soap, which, if it's good for anything, gets very hard and difficult to cut. Besides, **Pearline** is vastly better than any powdered soap could be. It has all the good properties of any soap—and many more, too. There's something in it that does the work easily, but without harm—much more easily than any other way yet known.

Beware Peddlers and some unscrupulous grocers will tell you, "this is as good as" or "the same as Pearline." IT'S FALSE—Pearline is never peddled, if your grocer sends you an imitation, be honest—*send it back.* 392 JAMES PYLE, New York.

Indigestion

Horsford's Acid Phosphate

Is the most effective and agreeable remedy in existence for preventing indigestion, and relieving those diseases arising from a disordered stomach.

Dr. W. W. Gardner, Springfield, Mass., says: "I value it as an excellent preventative of indigestion, and a pleasant ascidulated drink when properly diluted with water and sweetened."

Descriptive Pamphlet free.

Rumford Chemical Works, Providence, R. I.

Beware of Substitutes and Imitations.

For Sale by all Druggists.

"DER KICKER UND DER KRANK."

Der kicker vas von lifely man,
Who make a fuss vene'er he can
Und raise der vind mit vordy fight,
Ven efer dings vas not youst right.

Now people like to kick at him;
But who vould keep der vorld in trim,
Of he discovered not a flaw,
Und kicked on efryding he saw?

Und dere's dot krank, who's alvays wound
Und helps to make der vorld turn round:
His field of usefulness vas great,
D'hough oft he lifs in low estate.

Ven e'er der kicker has his say
Der krank invents some petter vay;
Der kicker kicks ven dings ain'd right,
Der krank prings petter dings to light.

Und so der two go hand in hand,
Und raise a rumpus in der land;
Yet, of der vorld gif dem no thanks,
I'll boom der kickers und der kranks.

EMILE PICKHARDT.

Islington, Mass.

"Do you believe man is made of dust, Mr. Snip?"

"Not all of them," said the tailor. "Dust always settles, and I know men who do not."

STATE OF OHIO, CITY OF TOLEDO, } ss.
LUCAS COUNTY, }

Frank J. Cheney makes oath that he is the senior partner of the firm of F. J. Cheney & Co., doing business in the city of Toledo, county and State aforesaid, and that said firm will pay the sum of One Hundred Dollars for each and every case of Catarrh that cannot be cured by the use of Hall's Catarrh Cure.

FRANK J. CHENEY.

Sworn to before me and subscribed in my presence, this sixth day of December, A. D. 1886.

{ SEAL } A. W. GLEASON, Notary Public.

Hall's Catarrh Cure is taken internally and acts directly on the blood and mucous surfaces of the system. Send for testimonials, free.

F. J. CHENEY & CO., Toledo, O.

☞Sold by druggists, 75c.

EXPERIMENTS IN CHANGES IN COLORS WITH REAGENTS.

The Magic Glass of Water.—Put a pinch of finely ground and sifted red sanders in a glass of water, and the liquid will at once assume a red color similar to that of claret. If this liquid be poured into another glass, previously rinsed with a few drops of vinegar, it will assume a beautiful tint, resembling that of brandy. If a little potassa be added to it, it will change back to its original color, and, finally, if a little alum be introduced, it will become as black as ink; so that, to a person not in the secret, it would seem as if claret, brandy and ink had been obtained from a simple glass of water.

Water Changed Into Wine.—Place into a glass a solution of sulphocyanide of potassium of ammonium. This solution (which is very poisonous) will appear as limpid as water. Pour the liquid into another glass, in the bottom of which has been placed a minute quantity of effloresced sulphate of iron, and it will at once change to a red color.

Wine Changed Into Water.—Dissolve fifteen grains of permanganate of potash in a quart of water, and a liquid will be obtained resembling claret in color. Add to this solution forty-five grains of tartaric acid.

Put into a bottle a few crystals of hyposulphite of soda and a little water and rinse a glass with the solution. If the permanganate solution be now poured into the glass, it will be instantaneously decolorized.

Wine Changed Into Milk.—If vinegar be added to tincture of iodine, a beautiful red liquor resembling claret in appearance will be obtained. If into this we pour a solution of hyposulphite of soda, we shall obtain a milky white liquid (due to the deposition of sulphur), and a credulous spectator might be led to believe that wine had really been changed into milk.

Water and Wine from the Same Pitcher.—Prepare some water chemically by adding to each pint forty drops of solution of chloride of iron and a few drops of sulphuric acid. The glasses in which it is desired to have the wine colored liquid appear are then prepared by rinsing them with a solution made in the proportion of one dram of sulphocyanide of ammonium and one drop of tincture of nutgall. One drop of this in each glass is sufficient. When the prepared water is poured into these glasses, it is instantly changed to a wine color. This may be changed back to water again by the addition of a solution of acetate of lead. The instantaneous changes produced seem magical.

A Purple, Green and Red Liquid from the Same Bottle.—Boil some leaves of red cabbage, and after half an hour's ebullition we shall have a beautiful purple liquid, which, when cold, may be put into a bottle for future use. Take three glasses. Let one be perfectly clean, in the second put a drop of ammonia, and in the third a drop of sulphuric acid. The liquid poured into the clean glass, will, of course, preserve its original color, that in the second will turn green, and that in the third will become red.—*Scientific American.*

AT THE NORTH POLE.

At the North pole there is only one direction—south. One could go south in as many ways as there are points on the compass-card, but every one of these ways is south; east and west have vanished.

The hour of the day at the Pole is a paradoxical conception, for that point is the meeting place of every meridian, and the time of all holds good, so that it is any hour one cares to mention. Unpunctuality is, hence, impossible.

Idleness, if spent in resting, is oftentimes best employed.

The Scoop.—First Reporter—We got the scoop on you in that robbery in the street car. We were the only paper that published the name of the pickpocket, his arrest, and the recovery of the money.

Second Ditto—Yes; but we were the only paper that gave the number of the car.

BOOK REVIEWS.

THE QUARTERLY ILLUSTRATOR.

The *Quarterly Illustrator* for March, published by Harry C. Jones, 92 Fifth avenue, New York, costs but one dollar per year, and is richly worth it. This number contains 338 illustrations, by 168 well-known artists. Among the articles are:

American Art and Foreign Influence, by W. Lewis Fraser, with original illustrations by Albert E. Sterner. The Pennsylvania Academy of the Fine Arts, by Charles McIlvaine, with original illustrations by prominent members. An Artist in Business, by Henry Milford Steele, with original illustrations by James Symington. A Painter of Marine Subjects, by John Gilmer Speed, with original illustrations by James G. Tyler. An Illustrator of Child Life, by William McKendree Bangs, with original illustrations by Maud Humphrey. A Versatile Artist, by Alexander Black, with original illustrations by Carle J. Blenner. A Half Hour with Studio Bores, by Charles DeKay, with original illustrations by numerous artists. A Painter's Progress, by Alfred Trumble, illustrated from paintings by Leonard Ochtman. A Decorative Artist, by Royal Cortissoz, with original illustrations by Frank Fowler. The Artistic Discover of Long Island, by Lillie Hamilton French, with original illustrations by Charles H. Miller. Illustrations of the Quarter, by Perriton Maxwell, with reproduc-

SCOTT'S EMULSION

OF **PURE COD LIVER OIL** WITH

HYPOPHOSPHITES OF LIME AND SODA.

THE STANDARD EMULSION OF COD LIVER OIL THROUGHOUT THE WORLD.

A BEAUTIFUL CREAMY MIXTURE—ALMOST AS PALATABLE AS MILK.

Having much greater remedial power than the crude Cod Liver Oil, without any of its nauseating effects.

Its PALATABLENESS, EASE OF DIGESTION, and long tolerance by most sensitive stomachs as well as its reliable therapeutic effect, has given it special favor with the medical Profession, and receives their unqualified endorsement and support.

Possessing as it does the tonic and stimulating properties of the Hypophosphites in combination with the strengthening and fattening qualities of the Cod Liver Oil—gives it a remedial value in WASTING DISEASES, ANÆMIA or IMPOVERISHED BLOOD, EMACIATION and CONSUMPTION—unequalled by any single or combined remedy in existence. The rapidity with which delicate children fatten and grow strong on this palatable Emulsion, is very remarkable.

Samples will be sent free except express charges to any wishing to try this preparation. For sale by all druggists.

SCOTT & BOWNE, New York.

tions from current periodicals. A Half Dozen Studios (from photographs). Twenty-seven Portraits of American Artists (from photographs). My Favorite Model, by George Parsons Lathrop, with original illustrations by a number of artists. Pictures That Have Influenced Artists, by Charles M. Skinner, with sketches from memory of well-known artists. Around the World of Art, with reproductions from foreign periodicals. Photographic appendix—Contrasts of Life and Art, by Will H. Low, with parallel illustrations.

THE STANDARD DICTIONARY.

The first edition of the first volume of this valuable work has been issued. The publishers inform us that it was not large enough to supply all the orders, and a second edition is being pushed to rapid completion. It is receiving unlimited praise from those who have received copies.

DEAL GENTLY WITH THE ERRING.

We have just received a copy of the greatest home song ever published in this country. The privilege of publishing in America alone cost $2,000 in gold. It is a song that will reach the heart of every Christian in the land. The melody is perfectly beautiful; can be played on piano or organ. We give our readers the first verse and chorus.

First Verse.

Deal gently with the erring!
Ye know not of the power
With which the dark temptation came
In some unguarded hour.
Ye may not know how earnestly
They struggled nor how well,
Until the hour of weakness came,
And sadly thus they fell.

Chorus.

Forget not thou hast often sinned,
And sinful yet must be!
Deal gently with the erring one
As God has dealt with thee.

Price 40 cents per copy; can be obtained by addressing the publisher, F. W. Helmick, 265 Sixth avenue, New York.

☞Our readers will receive a copy by sending 20 cents in postage stamps, and mentioning the American Analyst.

DIET FOR THE SICK.

Household News for January begins the publication of a series of articles on "Diet for the Sick," by Dr. Charles M. Seltzer. The subject is one of great importance, and the knowledge set forth in these articles will prove of great value to every household. As a rule, we work in the dark in caring for our sick; we have no guide to instruct and dictate what to do, and we rely on our own resources, which are often very limited. Hence, the publication of the above should be welcomed wherever the magazine finds its way.

Household News is published in Philadelphia, by Household News Company, limited, 420 Library street.

BUSINESS NOTES.

A SCOURGE OF HUMANITY AND ITS CAUSE.

There is no manner of doubt that scrofula is in many instances provocative of consumption in the first or second generation. A slight cold, if it attacks a person of scrofulous habit, is far more liable—and that, too, in a very short space of time—to give birth to tubercles upon the membrane of the lungs than it would in the case of a person whose circulation is not contaminated with the hereditary taint. Nay, more; experience has led physicians to the warrantable conclusion that pulmonary ulcers will sometimes break out without the preliminary cough. No testimony relating to Scott's Emulsion of Cod Liver Oil with Hypophosphites of Lime and Soda is more positive than that which shows its power to counteract the tendency of scrofula to culminate in consumption. It is a most efficient and palatable depurent of the blood, whether the contamination be consumptive solely, scrofulous, or rheumatic. Consumption, asthma, bronchitis, hip-joint disease (white swelling) and lumbar abscesses succumb to its curative action. The hypophosphites contribute in no minor degree to build up the system when wasted by disease, and constitute it a still more useful family medicine. Delicate children are particularly benefited by it.

FOR WEAK NERVES

Use Horsford's Acid Phosphate. It is particularly useful in making weak nerves strong, as it contains necessary elements of nutrition for the nervous system, obtained from natural sources.

Dr. J. Guy McCandless, Pittsburg, Pa., says: "I have used it in various forms of dyspepsia, with gratifying results."

WILLIAM R. WARNER & CO.

The founder and present head of this pharmaceutical manufacturing house of Philadelphia, is William R. Warner, and it is to his efforts in raising the manufacture of medicines to the highest degree of mechanical and scientific perfection, coupled with peculiar executive talent, that its great success has been due. Mr. Warner was born in Maryland in 1836, of parents of notable ancestry, through both his father and mother tracing relationship from well known English families, and close connection with prominent figures in the early history of this country. He received his education at a country school, later attending the Easton Academy, Maryland, but he soon found it necessary to labor for his support and entered on the duties of drug store apprentice in Easton. His spare time was devoted to study, particularly natural history and science, and studies of this character have been his pleasure throughout his life. He graduated from the Philadelphia College of Pharmacy in 1856, and then followed the retail drug business in Philadelphia for some years, keeping up active connection with the college and local professional associations. In 1866 he engaged in the wholesale drug business at 154 North Third street, ten years later removing to 1228 Market street. These premises still serve for offices and salesrooms, but the manufacturing branch had grown to such proportions that, a few years ago, a handsome seven story building was erected on Wallace street for its accommodation.

Mr. Warner has had as his associate for a number of years, his eldest son, William R. Warner, Jr., whose experience and training in his father's business have been of a character to make him an efficient and valuable aid.

The house of William R. Warner & Co. started from small beginnings, but is now one of the most enterprising and largest manufacturers of pharmaceutical products in America. It was a pioneer in the manufacture of sugar-coated pills and various other standard preparations, and has won a leading position through the skill and care exerted in its manufacturing processes, the reliability of its products and successful management.

The house manufactures all the standard lines of pharmaceuticals and a number of well known specialties. Agencies are maintained in London and Australia, and its manufactures are to be found throughout the world. Its exhibits at various world's fairs have secured many awards for excellence, and the beauty of its products invariably elicits attention and admiration. It enjoys to a marked degree the confidence of physicians and the drug trade.

BREAD FOR DIABETES.

Dr. R. C. M. Page, Professor of General Medicine in the New York Polyclinic, a medical authority and author of international repute, who was Honorary Vice-President of the Medical Congress held in Paris, in 1891, writes as follows from New York:

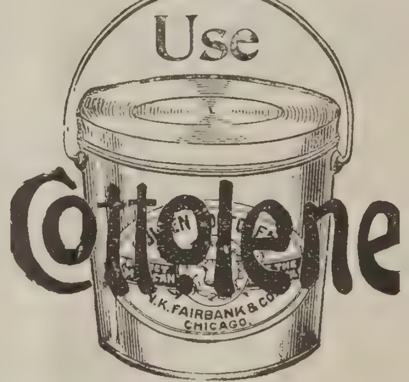
Messrs. Farwell & Rhines, Watertown, N. Y.

While abroad this summer, I made a special study of Diabetes Mellitus, and at Carlsbad I was astonished to find that the celebrated "Diabetic Bread" in use there, and at various watering places in Europe, and which has such a reputation, was made from your flour.

One of the Carlsbad physicians is now here, and I have shown him the bread made from your "Special Diabetic Food," and he could hardly believe it possible to make such bread from wheaten flour, containing a minimum of starch. It certainly makes excellent bread and cakes, and a diabetic patient fed on your "Special Diabetic Food" has had no return of sugar in the urine, during the three months he has been using it.

"He is WELL PAID that is well SATISFIED."
—*Merchant of Venice.*

The Verdict
OF ALL WHO



Is that it
SATISFIES EVERY DEMAND
of the careful housekeeper for frying and shortening purposes. It is far cheaper than butter, more economical than lard because it goes twice as far, and is sure to produce good results without waste. Therefore
IT PAYS WELL TO USE
Cottolene
GET THE GENUINE.

Sold by all grocers in three and five pound pails.
Made only by
THE
N. K. FAIRBANK
COMPANY
Chicago, New York, Boston,
Montreal, San Francisco,
Philadelphia, St. Louis.

THE AMERICAN COTTON OIL CO.

ARDENTER MUSTARD PLASTER MISPLACED.

INSTEAD OF A SUFFERING HUSBAND A DRUNKEN DRUMMER GOT IT.

The most laughable incident that has occurred for many years, it is said, happened not long ago in one of the down town taverns, says the Washington *Post.* An old gentleman and his wife arrived from a western city and took up quarters on the third floor. The husband was an invalid, having suffered from stomach troubles for many years. He came to this city to press his claims for the office of postmaster in his city, and brought his wife along for the purpose of taking care of him. The first night the couple were in the hotel the old gentleman was seized suddenly about midnight with violent cramps.

It was an old affliction with him, and, knowing that her husband was likely to be so afflicted at any minute, the wife had come prepared for any emergency, having a quantity of Ardenter mustard and cloths in her satchel. Very hot mustard plasters, it seemed, were the only thing that afforded the sufferer any relief in such attacks. Accordingly, when her husband uttered his first groan the good wife sprang out of bed, slipped on a wrapper, and dived into the depths of the gripsack after the Ardenter mustard. She produced a small tin box filled with the harmless-looking yellow powder, and a roll of soft strips of muslin, then glided softly out of the room, remarking to her husband, who lay in the bed bent up like a jacknife, "I'll have your plaster ready in a moment, dear."

Noiselessly she hurried along the corridor until she reached the toilet room, where, by means of a flow of hot water, she prepared a plaster about the size of a dinner plate. When everything was ready she clasped the plaster tightly in her hands to prevent its cooling before she reached her husband's side, and hurried back to the room.

The gas in the room had been turned very low, but there was light enough for the faithful old wife to see what she was doing. She approached the side of the bed very gently, and with all the tenderness of her nature applied the Ardenter plaster to the pain-racked abdomen of the man. Then she crossed to the other side of the bed and, lying down, carefully awaited results.

"Do you feel easier, dear?" she inquired sweetly, after a few minutes.

No answer.

"Don't you feel better, pet?" she asked again, as she turned over to gently caress her husband.

"Ugh!" was the reply, as the male form turned and stretched. Then there was a yell and scramble such as never before or since disturbed the peaceful quiet of that hotel. The woman had made the astonishing discovery that the man to whom she had applied the Ardenter mustard plaster was not her husband, but instead was a total stranger. She had entered the wrong room.

Bounding out like a frightened antelope she rushed into the adjoining room wringing her hands and half dead with fear and excitement. Her sick husband, who by this time had grown easier, was sitting upright in bed, and as his wife entered the room and sank exhausted on the floor, he said:

"What on earth is the matter, Martha? Has anybody hurt you? Speak, quick, woman!"

"I—O, I—O, I got into the wrong room!" moaned the wife, vainly endeavoring to calm herself. She then explained fully what had happened, and when she had completed the story of her embarrassing mistake the husband inquired:

"Well, where is the Ardenter mustard plaster?"

"I—I—left it on the other man's stomach," sobbed the poor woman, again bursting into tears.

Before the astonished husband had time to realize what his wife had said there came a sound from the next room: "Clerk! landlord! bellboy! help! Oh, my!"

The gentleman in the adjoining room had discovered the mustard plaster. He was a commercial traveler, and, as it afterward developed, had been laboring under a heavy "jag" when he retired that night. He had left his gas burning dimly, and had forgotten to bolt his door. The drummer represented a wholesale whisky house, and had been sampling his samples very freely. He afterward said that when he awoke and felt that terrible burning he thought he "had 'em."

He reached down in the vicinity of the scorching sensation and came in contact with the cold, clammy plaster, which curled into a roll as he moved his hand over it. He threw the plaster across the room, and as he turned over and buried his face in a pillow moaned: "Oh, if I had only stopped drinking years ago! They told me whisky would eat out my insides, and now the worst has come! I am going to die!"

But he didn't. He is still drinking and selling whisky. As for the old gentleman and his wife, they had their meals served in their room the next day and the following day left the city. He hasn't received his postoffice appointment yet.

W. G. Dean & Son, are the manufacturers of Ardenter mustard, 361 and 363 Washington street, New York.

◆

THE SWINE AND THE FLOWER.

I shrank to meet a mud-encrusted swine,
  And then he seemed to grunt, in accents rude,
"Huh! Be not proud, for in this fat of mine,
  Behold the source of richness for your food!"

I fled, and saw a field that seemed, at first,
  One giant mass of roses pure and white,
With dewy buds 'mid dark green foliage nursed,
  And, as I lingered o'er this lovely sight,
The summer breeze, that cooled that southern scene
  Whispered, "Behold the source of Cottolene!"

—*M. E. Wilmer.*

KINGSFORD'S
OSWEGO STARCH

The Standard of Excellence.

"PURE" AND SILVER GLOSS — For the Laundry.
CORN STARCH — For the Table.

ABSOLUTELY PURE IN QUALITY.

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$10.00 worth of lovely Music **for Forty Cents,** consisting of 100 pages full size Sheet Music of the brightest, liveliest and most popular selections, both vocal and instrumental, gotten up in the most elegant manner, including four large size Portraits.

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PADEREWSKI, the Great Pianist,
ADELINA PATTI and
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Broadway Theatre Building, New York City.
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In the **REVISED ENCYCLOPEDIA BRITANNICA** there is something about everybody and everything of importance that is or ever was in the world. Within the TWENTY volumes of this great work there are stories of lives that excel in interest any romance ever written; there is all about commerce, art, history, literature, mathematics, mechanics, business, to give you ideas and information for use in your daily work; there is a liberal education for your children who are old enough to go to school. Thus is it a guide board for a l.

There are none so old none so young, none so poor, none so rich, that they do not want, and cannot get, the REVISED ENCYCLOPEDIA BRITANNICA, for it will only cost you a DIME A DAY for only 90 days, and you will be presented with a Dime Savings Bank, which will enable you to save for this great reference library.

On receipt of only **One Dollar** we will forward to you, charges prepaid, the entire set of 20 volumes, the remaining $9.00 to be paid at the rate of **10 Cents a Day** (to be remitted monthly). A beautiful dime savings bank will be sent with the books, in which the dime may be deposited each day. This edition is printed from new, large type on a fine quality of paper, and is strongly bound in heavy manilla paper covers, which with proper care will last for years. Bear in mind that the entire 20 volumes are delivered to your address, with all charges paid to any part of the United States.

The price of the Encyclopedia, if paid in one cash payment, will be $9.00. Address

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Please send AMERICAN ANALYST for one year, and deliver to me the entire set of 20 volumes of Revised Encyclopedia Britanica, as above described, together with your Dime Savings Bank, for which I enclose One Dollar, and further agree to remit 10 Cents a day (remitting the same monthly) until the remaining $9.00 is fully paid.—This pays one year's subscription.

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TO THE MEDICAL PROFESSION.

Elixir Salicylic Acid Comp.

PREPARED ONLY BY WM. R. WARNER & CO., PHILADELPHIA, PA.

This preparation combines in a pleasant and permanent form, in each fluid drachm, the following:

℞	Acid Salicylic (Schering's)	grs. v.	Potass. Iodid.	grs. iss.
	Cimicifuga	grs. i½	Tr. Gelsemium	gtt. i.

SO PREPARED AS TO AFFORD A PERMANENT, POTENT AND RELIABLE REMEDY IN

RHEUMATISM, GOUT, LUMBAGO, Etc.

This preparation is especially valuable for rheumatic diathesis and in the treatment of acute inflammatory, subacute and chronic rheumatism; any of which will yield to tablespoonful doses; every three or four hours, until four doses are taken; then a dessertspoonful at a time and finally decreased to a teaspoonful every three or four hours.

In acute inflammatory rheumatism, experience has proven that two teaspoonfuls administered every four hours, until a slight ringing in the ears follows, the dose then decreased to a tablespoonful every three or four hours, will produce the desired effects.

The advantages of Elixir Salicylic Acid Comp. are afforded by the combination of Salicyclic Acid with Soda in excess, thus forming a salt less corrosive and irritating and more readily borne by the stomach.

The other ingredients possess advantages well known to the Profession to whom this preparation is alone introduced, we therefore suggest the propriety of specifying "Warner & Co.'s" and ordering in 12-oz. quantities, to obtain original bottles.

It is a matter of great satisfaction to us to be able to place before the Profession a remedy so effectual in the cure of one of our most stubborn classes of disease.

Elixir Salicyclic Acid Comp. is put up in 12-oz. square blue bottles, with prescription label on it, and may be obtained from Druggists everywhere. See that no substitutes are offered.

PRACTICAL CHEMISTRY AT BROOKLYN POLYTECHNIC.

The announcement of a new course in practical chemistry at the Brooklyn Polytechnic Institute is exciting much interest, and promises to be very successful, as it appears to be in every way adapted to meet the wants of the day, and is in charge of men of wide experience and skill in both the theory and the practice of science. The course includes thorough instruction in experimental chemistry and the various branches of chemical analysis, pure and applied chemistry, and other branches necessary to the analytical and technical chemist. Special attention is to be paid to instruction and laboratory work in organic chemistry, and also to the study and testing of technical products, wastes, processes, etc. The new laboratories are commodious and are fully provided with the apparatus and chemicals required in analytical, experimental and research work. The course will include physics, modern languages, draughting and the other subjects called for in a broad and thorough American education, and will be maintained at the high standard which has for years characterized the Polytechnic. The study of chemistry begins in the freshman year, and in each successive year will occupy more of the student's time. Facilities are also to be given for post graduate work in both pure and applied chemistry and in chemical engineering. As colleges are now developing so rapidly, and finely equipped departments are no longer the rarities which they were twenty years ago, perhaps the most important feature in the policy of this new course is the intention to make the instruction strongly personal, and develop to the fullest extent the individuality of the student and his ability to think, apply and originate, rather than to carry on mere mass teaching, having for its object only the acquisition of knowledge.

The educational facilities and advantages of Brooklyn have made themselves manifest during the last few years in a marked manner. This city is a part of a complex of cities which aggregates nearly 4,000,000 inhabitants. Elevated, trolley and ferry systems make all of this vast community easily and quickly accessible. The use of the numerous great libraries and valuable collections becomes possible to the student, and he is also able to attend the meetings of the various scientific societies and the public lecture courses, and yet avail himself of the cheaper rates of living afforded by the city of Brooklyn. In this great complex municipality and its neighboring towns is included almost every kind of manufacture, so that the student has an opportunity to study manufacturing and technical operations in a way not excelled, if indeed, equaled, in any other part of the country.

The new chemical course will be under the direction of Peter T. Austen, Ph. D., F. C. S., late professor of chemistry in the New Jersey State Scientific School and Rutgers College, who has been remarkably successful not only as a teacher and organizer, but as an inventor and chemical engineer. He will be ably assisted by William M. Grosvenor, B. S., Gillett Wynkoop, A. B., H. M. Baker, Jr., and others.

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POOR BUSINESS.

The *Confectioners' Journal* of Philadelphia, which for the last twenty years has been fed at the trough of the confectioners of this country, has so far forgotten itself as to attempt in a clumsy fashion and with little regard to the truth or the use of the King's English to read us a lecture on the proper conduct of the *American Analyst.* Unfortunately that paper has been managed so long on the principle of taking anything and everything in its advertising columns so long as it is paid for it, and debauching its so-called editorial columns by ludicrous puffs and slimy adulations, that it is beyond its comprehension how any journal can exist by only admitting to its columns the advertisements of honest, pure goods. As the AMERICAN ANALYST rigidly excludes adulterated or inferior goods of any kind from appearing in its advertising pages, we have aroused the ire of the Philadelphia candy organ, and it expresses its surprise that we have never pitched into the goods advertised in our columns. For the reasons already given, we need not do this for our columns are clean, which is more than we can say of those of our contemporary.

We do not believe in newspaper controversy, especially when like that now attempted the underlying motive is simply to truckle to an advertiser whose goods have been hit pretty hard, and who sees no way of getting out of the trouble except by denying what has not been charged. The only redeeming feature of the article in the *Confectioners' Journal* is its beautiful inconsistency. It tries to help its advertiser in a defense of an accusation we never made, and to do so lends its alleged wide circulation to a reprint of what we said only in a much garbled and distorted fashion. Aside from this, the miserable, ungentlemanly and entirely untruthful personalities of the candy organ are not worthy of notice. It is poor business.

HOUSEHOLD.

TESTED RECEIPTS.

Every receipt here given is original, has been practically tested by the AMERICAN ANALYST and is therefore confidently recommended.

BRAISED WILD DUCK.

A pair of ducks, one onion minced fine, bread crumbs, salt, pepper, a pinch of sage, and a little chopped pork for stuffing, four tablespoonfuls butter, one cup of gravy, browned flour. Prepare and stuff the fowls as for roasting. Have the butter hot in a large frying pan, and fry first one fowl then the other in this, turning as it browns. Then lay them in a large saucepan, and pour the gravy, previously heated, in with them. Cover closely and stew gently an hour, or until the game is tender. Transfer the fowls to a hot dish and cover it to keep in flavor and warmth while the gravy is strained. Let it cool a little to throw up the grease. Skim, thicken with browned flour, and boil five minutes. Skim again, put back the duck into the gravy, and let it all stand heating five minutes more. Pour a little gravy over the ducks, the rest into a boat.

FRICASSEED CHICKEN A L'ITALIENNE.

Cut a pair of chickens into joints; put them with half a pound of fat salt pork, cut into strips, into a saucepan with a very little water, and stew covered until tender. Remove the chicken to a hot-water chafing dish and keep warm while you prepare the gravy. Turn the liquor in which the chickens were cooked into a frying pan, thicken with browned flour; put into it two sprigs of parsley, one sprig of thyme, one bay leaf, a small onion cut in pieces, a dozen mushrooms chopped very fine, one clove. Boil up quickly; add a teaspoonful butter, and stew just half an hour. Then add two glasses wine—white or pale sherry—and one tablespoonful salad oil. Simmer a few minutes, and strain through a coarse colander over the chicken.

SWEETBREADS SAUTES AU VIN.

Parboil and blanch three sweetbreads; let them get perfectly cold; cut lengthwise into slices a quarter of an inch thick. Have a teaspoonful of butter hot in a frying pan, and lay them in. Cook ten minutes, turning all the while; then add a cup of brown gravy—veal or fowl—a tablespoonful mushroom catsup, a tablespoonful chopped onion and parsley mixed; salt and pepper to taste, previously heated together. Shake all until they have stewed for five minutes, put in a glass of brown sherry or champagne, boil up once and pour into a hot dish.

OYSTERS IN BATTER.

One quart oysters, two eggs whipped light, one cup milk, pepper and salt, flour to make a good batter. Dry the oysters, dip in the batter that it may be thickly coated. Fry in boiling hot lard.

WINE JELLY.

One package of gelatine soaked in one large cup of cold water for an hour, then add a cup and a half of sugar, the juice of a lemon and half the peel. Cover for half an hour, then pour on a pint of boiling water, stir and strain. Then add two cups white wine or pale sherry, and strain through a flannel bag. Pour into a mold and put in a cool place.

ENGLISH TAPIOCA PUDDING.

Soak one cup tapioca in a pint of milk; pour into a stoneware jar, set in a pot of warm water, and let come to a boil. When the tapioca is soft, turn out to cool, while you make the custard. A quart of milk, five eggs beaten very light, rut a cup of sugar and two tablespoonfuls butter together; mix all with the tapioca, and add half a pound of raisins, seeded. Bake in a buttered dish one hour.

USEFUL ALPHABET FOR HOUSEWIVES.

Always appear at table with smooth hair and neat apparel.

Bread should never be hurried; give plenty of time, both in rising and baking.

Cake, after it becomes stale, makes an excellent steamed pudding, eaten with a sauce or sweet gravy.

Drive ants out of your cupboards by sprinkling pulverized borax on the shelves.

Economy is the road to wealth, and it is a poor housekeeper who wastes anything needlessly.

Find time each day for a few moments' mental culture.

Grow a few useful herbs, as well as flowers, in your kitchen garden.

Have a good motto each year, by which to govern your daily life. "Trust and try" is one of many.

Jokes, and pleasant, lively table-talk, aid digestion.

Keep a careful account of your household expenses. You will find it invaluable for reference.

Love lightens labor, and quiet, loving tones make a happy home.

Make pie crust with a little baking-powder sifted in the flour, and use less shortening. You will find it much more digestible, and better for all fruit pies.

Naming over all the trials and troubles of the day to your tired husband only adds to his burdens and does not lighten your own.

Old pants, washed clean, and pieced in plain patchwork, tied with bright wool, make warm and durable comforts for the beds.

Plan your work carefully each morning before rising. Remember, brains can often save weariness.

Quiet tones and temper add to your beauty, as well as the comfort of your family.

Rainy days are well spent in answering your letters.

Save all your bread crumbs and crusts to crumble into your fried potatoes, or add to your hash.

Try to become the best and most thorough, as well as most economical, housekeeper of your acquaintance.

Use coarse salt to sprinkle over your carpets before sweeping, to brighten and clean them.

Vinegar added to boiling beef (a tablespoonful) makes it much more tender.

Welcome your husband and children with a pleasant word and smile.

Xantippe was a scold—do not imitate her.

Your bread and sponge stirred up after dinner and kneaded stiff at bedtime, will always insure your getting it baked early in the morning; and light rolls for breakfast, if desired.

Zeal and patience will in time lead to success-crowned effort.—*Reflector.*

ORIGIN OF VEGETABLES.

Spinach is a Persian plant.
Filberts came from Greece.
Quinces came from Corinth.
The turnip came from Rome.
The peach came from Persia.
The nasturtium came from Peru.
Horse-radish is a native of England.
Sweet marjoram is a native of Portugal.
Sage is a native of the south of Europe.
The bean is said to be a native of Egypt.
Damsons originally came from Damascus.
The pea is a native of the south of Europe.
Coriander seed came originally from the East.
The gooseberry is indigenous to Great Britain.
Ginger is a native of the East and West Indies.
Apricots are indigenous to the plains of America.
The cucumber was originally a tropical vegetable.
Pears were brought from the East by the Romans.
The walnut is a native of Persia, and Caucasus and China.
Capers originally grew wild in Greece and northern Africa.
Garlic came from Sicily and the shores of the Mediterranean.
The clove is a native of the Malacca Islands, as also is the nutmeg.
Cherries were known in Asia as far back as the seventeenth century.
Parsley is said to have come from Egypt, and mythology tells us it was used to adorn the head of Hercules.
Cloves came to us from the Indies, and take their name from the Latin clavus, meaning a nail, to which they have a resemblance.
The cantaloupe is a native of America, and so called from the name of a place near Rome, where it was first cultivated in Europe.

DO NOT REMOVE THE SKINS.

Dr. Letheby, an eminent English authority on foods, made a series of careful examinations some years ago for the purpose of determining the effects of cooking potatoes without removing the skins. He found that when the potatoes were cooked without removing the skins, the loss of nutritive material by extraction of the juice of the potato was about 3 per cent. When the skins were removed before boiling, the loss was 14 per cent, or one-seventh. It thus appears that removal of the skins before boiling is a very wasteful process, and these experiments explain why baked potatoes are more palatable than boiled. It is also evident that a roasted or baked potato is more nutritious than a boiled potato.

TO TELL ALL-WOOL FROM MIXED COTTON GOODS.

According to the *Sanitarian* the genuineness of woolen clothing may be tested by placing a small fragment in caustic soda, which quickly destroys animal fibres, but has no effect upon those of vegetable origin. If the article is all-wool it will be completely dissolved; if it has a groundwork of cotton, the latter will remain.

EXTERMINATING ROACHES.

Sweeten some water well with common molasses and put it into a tin pan or wash bowl deep enough to drown the bugs when they get in, and place the vessel after dark in their runways. Place the end of some flat sticks about one foot in length (pieces of common lath are best) on the side of the vessel, letting the other end rest on the floor. The odor of the molasses will draw the roaches from their hiding places. A few nights will destroy them, however numerous. This method enables one to remove the dead bugs from the house, which is very desirable and is very much better than to poison them. In such case they retreat and die in their hidden places and give out an offensive odor.

KEEP YOUR PIANO CASE BRIGHT.

If your piano has a bluish, smoky look or bloom upon the case, it means that you do not take proper care of this delicate piece of furniture. The following method of cleaning a rosewood or ebony piano case was given to the writer by a manufacturer of pianos:

Make a suds of white castile soap and lukewarm water, dampen a soft sponge with this, and wash the surface of the wood, one side at a time; then take a small piece of chamois, dampen it with kerosene, and go over the side of the case which you have just washed.

Next take a soft cloth and polish the surface with white flour; this dries all moisture, and your piano looks as good as new.

◆

Sickness is a calamity from which no flesh is exempt. There are balms for the wounds of the rich, but the poor must bear their own infirmities. With love, exquisite neatness, patience, encouragement, quiet, and a little hospital learning, wondrous cures can be wrought.

Chewing will stop the ordinary nose bleeding, and the shock of dropping a cold key or a handful of pennies down the back will often give relief. In case of a severe attack syringe the nasal cavity with cold salt water. If this does not stop the flow of blood, throw the head back, raise the arm up as far as possible, and apply cold sponges to the bridge of the nose and the back of the neck.

The quickest way to treat a burn or scald is to cover it with carron oil and flour and bandage with linen. In case of prostration from either accident administer a mild stimulant.

When a delicate person is fatigued and has no appetite, sponging the body with bathing whiskey, diluted alcohol or milk, will nourish the system and produce rest or refreshing sleep.

A bug in the ear may be drowned out with a little warm water. Apply with a sponge or syringe, and after each injection incline the head with a jerk so as to dislodge the contents of the cavity.

Distressing vomiting may be relieved by applying to the stomach a hot shingle or woollen pad brought from the oven.

If you have a sore finger which throbs and pains you, hold it in hot water several times a day until you are relieved.

If you shut your finger in a door or bruise it in any way, put it in water as hot as you can bear. In a few moments change it for hotter, and keep it in water at least fifteen minutes.

Strange to say, a hot foot-bath will often relieve a backache as it will a headache. Mustard and hot water in a foot bath will sidetrack a fever if taken in time, cure a nervous headache, and induce sleep.

One of the best cures for red eyelids is to bathe them in water in which is distilled a little powdered borax. This simple lotion is almost miraculous in its effects.

If the throat is very sore, wring a cloth out of cold salt water and bind it on the throat when going to bed; cover it with a dry towel. This is excellent.

A very good authority gives us a simple remedy for hiccough: A lump of sugar, saturated with vinegar. In ten cases, tried as an experiment, it stopped hiccough in nine.

The following is a splendid liniment for chilblains: One ounce of camphor gum, four fluid ounces of olive oil. Dissolve together by a gentle heat, and apply to the afflicted parts.

Soak the feet and bind on baking soda dampened, and in the morning you will be surprised to find the soreness all out of the corns.

To make the eyebrows grow better, rub common salt into them every night before going to bed.

"I have called," said the captious critic, "to find out what reason you can give for representing the new year as a nude small boy."

"That is done," replied the art editor, "because the year does not get its close until the 31st of December."

ADULTERATION.

ADULTERATION IN GREAT BRITAIN.

[From *Food and Sanitation.*]

DISEASED MEAT PROSECUTION IN NEWCASTLE.

At the Newcastle police court, on December 22. John Thomas Little, butcher, Jarrow, was summoned for being the owner of two diseased carcasses of mutton found in a slaughter house in the cattle market on the 5th of December. It appeared that defendant sent two sheep, one of which was dead, to a slaughter house to get dressed. They were seized by the inspector. The owner afterwards made several applications to get the carcasses away, although he was told they were diseased and unfit for food. Dr. Armstrong, medical officer of health, described them as being emaciated, flesh pale and dropsical, the result of liver disease. The bench considered the case a bad one, and fined defendant £5 and costs. Frederick Campbell, Alnwick, pleaded guilty to being the owner of four quarters of diseased beef that were found in the cattle market on the 14th of November. The evidence showed that defendant had bought the carcass and hide from a farmer near Alnwick for £1, and sent it to Newcastle for sale as human food. Dr. Armstrong stated the animal had been extensively affected with tuberculosis, and the flesh was quite unfit for food. A large portion of the pleura had been removed with a view of concealing the disease. The bench considered it an aggravated case, and fined defendant £10 and costs, or two months' imprisonment. Mr. R. S. Holmes prosecuted on behalf of the corporation in both cases.

POISONING BY HOME-MADE WINES.

The *British Medical Journal* says: "On this subject we have received rather a startling communication from Mr. G. A. E. Roberts, of Twyford, Hants. He has had over thirty cases, during the last twelve months, of lead poisoning from drinking home-made wine and beer, brewed in glazed earthenware pans. He is sure that this only represents about half of the cases, as many are not sufficiently ill to seek advice. According to Mr. Roberts, if other country districts suffer in the same proportion, there must be somewhere about 50,000 cases a year in England. He points out that if the use of lead in glazed pans was prohibited, or they were marked in some way to show that it was unsafe to brew in them, a great amount of sickness would be prevented. Notices might be posted up in villages calling attention to the danger of using these vessels for such purposes."

WHAT IS ADULTERATION?

Much has been said in print about jellies adulterated with glucose and flavored otherwise than with fruit juices. But what is the matter with glucose? asks the *Washington Star*. A more innocent substance does not exist. It is merely a sugar that does not crystalize, derived from corn starch. The flavorings employed are harmless. Result, some very pleasant articles of diet, purchasable at prices low enough to bring them within reach of poor people. The latter, who cannot afford to indulge in jellies at thirty to fifty cents a pint, get a substitute which gratifies the palate and does not hurt the pocket.

Surely, say the chemists quoted, it is not desirable that the law should drive these articles out of the market. The same argument applies to vinegars obtained by fermentation of grain. They are colorless, and so the manufacturer adds a little burnt sugar to make them look like wine and cider vinegars. The coloring it is sought to forbid by legal enactment, and loud are the howls against this form of imitation. The grain vinegars are called "artificial," supposed to be made out of mineral or wood acids, and declared impure and unwholesome. The truth is that they are perfectly healthful—in fact much cleaner and more free from dangers to health than the vinegars from fruit juices. The brown color of cider vinegar is due wholly to impurities, coming from iron and tannin, or the wood of the barrel.

A WARNING TO TRADESMEN.

At Lambeth, on December 21, Charles Wootton of Gipsy-road, West Norwood, was summoned by H. T. Wiggs, Inspector under the Food and Drugs Act to the Lambeth Vestry, for having unlawfully refused to sell him an article required for analysis. H. J. Smith, Clerk to the Lambeth Vestry, appeared in support of the summonses, and stated that on 30th of November a woman, employed by the Vestry for the purpose, went into the defendant's shop and purchased some butter. When the purchase was completed Mr. Wiggs went into the shop, but directly he saw the Inspector the defendant seized the butter from the woman and declined to let the Inspector have it. Subsequently, upon being remonstrated with, the defendant handed a parcel of butter to the Inspector, but whether it was the same as was served to the woman, it was, of course, impossible to say. In answer to the summons, the defendant explained that by inadvertence he gave woman some butter that was rank, and, remembering what he had done, took it back to change it. Mr. Biron said it would be perfectly impossible for Vestries to work this Act if conduct of this sort were passed over. He ordered the defendant to pay a fine of £5 and 2s. costs.

THE VALUE OF A BRAND.

Once an amusing story was told me by a South Sea trader, writes Robert Louis Stevenson. He had been in the habit of carrying all sorts of tinned meats, which the natives bought with avidity. Each tin was branded with a colored picture—a cow for beef, a sheep for mutton and a fish for sardines. It happened that the firm who furnished the mutton thought it a good plan to change their labels, that their goods might be more easily distinguished from others. The mark chosen was a red dragon. The natives came with their copra to trade as usual. The new tins were shown them, but they recoiled in horror and gave the trader to understand that they had had some religious instruction, and were not to be deluded into eating tinned devil. The trader was forced to eat his stock of mutton himself, for not a native could be persuaded to touch the accursed thing. This reminds us of the Massachusetts grocer who wouldn't sell deviled ham—an actual fact.—*New England Grocer.*

HYGIENIC.

THE FUNCTION OF CLOTHING.

BY DR. ROBSON ROOSE.

Wind carries off the layers of air in contact with body, replaces them by colder air, and promotes evaporation, whereby the temperature is lowered to an almost indefinite extent. Every one knows the sensation caused by the wind blowing on damp clothes, or on the wet skin, and the intense cold thus experienced. To obviate this effect the wind must be prevented from reaching the surface of the body, and for this purpose skins and furs are the most efficient coverings. These constitute extremely warm clothing, and cannot be dispensed with in many parts of the world. It is perhaps well to repeat that these articles possess no warmth in themselves. When worn they prevent the natural heat of the body from being rapidly dissipated and neutralized by the external cold air. Next to these comes thick, coarse woolen fabrics which entangle and retain large volumes of air. These are especially suitable whenever great fluctuations of temperature have to be encountered. Besides the properties already mentioned, there is another peculiarity connected with wool which enhances its value as an article of clothing, viz., its power of absorbing water, which penetrates into the fibers themselves and causes them to swell, and also occupies the space between them. This property is a very important one as regards health. The normal skin gives off nearly a pint of water, in the form of perspiration, during twenty-four hours, and this fluid disappears by evaporation. The passage of liquid into vapor causes heat to become latent, and the bodily temperature is thus lowered, as may be clearly observed some little time after exertion. If dry woolen clothing be put on immediately after exercise, the vapor from the surface of the body is condensed in and upon the wool, and the heat which had become latent in the process of evaporation is again given off. Flannel clothes, therefore, put on during perspiration always feel warm, whereas cotton and linen articles allow the perspiration to pass through them, so that the evaporation and cooling processes are unchecked. There is, therefore, an obvious reason for selecting flannel clothing for wearing after active exertion. An individual who is perspiring freely is far less likely to take cold when clad in flannel than when clad in linen or cotton. Dr. Poore thinks that cotton might be made to acquire properties similar to those of woolen by adopting a looser method of weaving the material. If linen or cotton be woven "in a loose, porous fashion, these fabrics then become, as heat retainers, scarcely inferior to wool." Woolen fabrics cause a sensation of warmth in virtue of another peculiarity which they possess. They often present a rough surface, which, coming into contact with the skin, causes friction, and therefore more or less warmth. The irritation thus produced is intolerable to some persons, but if it can be borne for a short time, the skin often gets accustomed to the sensation.

The color of the materials has some influence on the warmth of clothing. Black and blue absorb heat from without, but white and light shades of yellow, etc., are far less absorbent. This difference can be demonstrated by experiment; the same material, when dyed with different colors, will absorb different amounts of heat. In hot countries white coverings are universally worn, and sailors and others wear white clothing in hot weather. With regard, however, to heat given off from the body, the color of the materials used as clothing makes little, if any, difference. Red flannel is popularly supposed to be warm, though it is no better in this respect than similar materials of equal substance, but white or gray in color. Dark clothing is best for cold weather, because it more freely absorbs any heat that is obtainable. Waterproof clothing is very valuable under certain conditions. It protects against cold, rain and wind; but it is an exceedingly hot dress, for it prevents evaporation and condenses and retains the perspiration. Save for very short periods, it should never be worn by persons taking active exercise. For those, however, who are not exercising their limbs to any great extent, but are exposed to wet and cold, waterproof materials are an excellent protection. Woollen clothing should be worn underneath in order to absorb perspiration, and the waterproof should be taken off as soon as the necessity for it had passed away. Ventilating waterproofs are sometimes offered, but a real combination of this kind is an impossibility. If a garment let out air and perspiration, it will let in wind and wet. If thoroughly waterproof, it will not admit of any true ventilation.

With regard to the woollen clothing as a protection against wet, it must be remembered that fabrics of this kind, especially if loosely woven, absorb an enormous amount of water. A man clad in thick woollen clothes, and walking in rain for some hours without other protection, is conscious of great weight and inconvenience. Under similar conditions cotton and linen garments are speedily saturated and the wearer soon becomes chilled. Garments made of pure silk are exceedingly comfortable, but very expensive. Thin silk, worn under flannel, adds greatly to the protection afforded by the latter against chills, and likewise prevents the unpleasant sensation of friction. Thin flannel socks, worn under merino or woollen ones, form a good remedy for cold feet.

The principal conclusions to be drawn from the foregoing paragraphs may be thus briefly stated:

1. As a protection against cold, woollen garments of equal thickness are much superior to either linen or cotton, and should always be worn for underclothing. Furs and leather are serviceable against great cold, and especially against severe wind. Waterproof clothing should be reserved for very wet weather, and generally for persons who are not taking exercise when exposed to it.

2. The value of several layers of clothing as compared with a single warm garment should be borne in mind. An extra layer even of thin material next the skin is often very valuable.

3. As a protector against cold, a garment should not fit closely to the body, but should be comparatively loose and easy, so that a layer of air is interposed between it and the skin. A loosely woven material is warmer than one of an opposite character.

4. For wearing at night, woollen clothing is not generally desirable; cotton or linen is far better. The blankets constitute the woollen covering, and ought to protect the body sufficiently.

5 Lastly, it must always be remembered that the source of heat is within the body itself, and not in the clothes. Proper food, coupled with a due amount of exercise, will produce heat; the function of clothing is to retain the heat thus generated.—*Fortnightly.*

DUST TO DUST.

The sentiment in favor of burial in wicker coffins or some rapidly destructive material is growing rapidly. In Great Britain there is a large and constantly growing organization advocating it. The claim is that the more speedily bodies in the earth return to their native elements—dust to dust—the better from a sentimental as well as a sanitary standpoint. The final disposition of all interred bodies is a conversion into, and comingling with the soil. There is no sensible reason why this process should be delayed so as to cover years—unless in case where disinterment is contemplated, and then it would be better to have the body placed in a receiving vault. Bishop Potter, who is himself a member of the Burial Reform Association, recently announced that he had provided for his own interment in accordance with the regulations of the association.

Fresh earth is an admirable disinfectant and the sooner it comes in contact with decomposing bodies the better.

SLATES AND PENCILS A MEANS OF THE SPREAD OF SCHOOL DISEASES.

Dr. Cyrus Edson, of the New York Board of Health, is reported as pointing out the new fact that many cases of communicable disease are the result of a practice among school children of exchanging their slates and pencils while at their studies. The Board of Education will be requested to interdict the passing of slates and pencils from hand to hand. The inspectors of the board have reported cases where, in their opinion, measles and scarlatina have been spread among the pupils of the public school by a too free interchange of articles from the sick to the well.—*Journal Am. Med. Assoc.*

VEILS HARMFUL.

Women do not realize how much harm is done to the eyes in wearing veils, especially the coarse net or heavily dotted ones which are so popular now. A specialist has said that every dot in a veil is a fee in the pocket of the oculist.

IVY-GROWN HOUSES.—Houses, the walls of which are covered with ivy, are not rendered unhealthy thereby, especially stone and brick houses. The ivy in its struggle for life will absorb every particle of moisture, while the leaves and net-work of branches effectually prevent the beating rains from greatly saturating the walls with moisture. In addition to these offices, the shade afforded against the scorching rays of the sun in summer is most grateful. It's a pity that some of the more delicate varieties, such as are seen in so many places South and East, cannot be grown successfully in all parts of Iowa. There are hardier varieties that are indigenous in all parts of the State that are perfectly hardy, and can be grown easily, and, as said above, beneficially.

POWDERED FACES.

Sylvia's Journal for December in "Toilet Talks" is instructive on the subject of face-powders. But it is somewhat startling to be told that "nine women out of ten are in the daily practice of powdering their faces;" hence the necessity for their purity is argued. The object of all powdering women is to render their skins healthful, which, it is asserted, "depends upon its pores being kept free from any matter that can clog them up, and prevent the free exudation of the perspiration through them, hence powder which does this must be harmful," and the "pallid and sallow" skins of actors and actresses are called to witness the truth of this statement.

One of the objections to vaccination as a preventative to small pox is that it diverts the minds of the people from the necessity of all-round cleanliness in the establishment of health, which is the best possible preventative against small pox or any disease; the hygienist's objection to deodorant and disinfectants is that many people imagine that bad smells and dirt may stand with impunity when these are used, and upon the same principle does the enlightened health-seeker object to any local doctoring of the skin, for so long as the beauty of health can be simulated by the powder puff, and the presence of disease concealed from the casual eye by an artificial surface, then so long will the value of pure food, fresh air, exercise, bathing and early hours be forgotten and ignored. The woman who powders is lax in her physiological morals, either through vanity, ignorance, thoughtlessness or laziness, or perhaps all.

The composition of face powder is next dealt with, and here we learn a little which may help us when trying by argument to save our powdered friends from themselves. "Powders," we read, "are made of a variety of substances, the vegetable ones being most harmless, those containing minerals being highly injurious. Amongst the first-named are rice, wheat, and potato starch, and the latter include such ingredients as mercury, arsenic, lead, oxide of zinc, bismuth, etc. . . . A French writer on the subject says that 'all powders containing chalk, talc, bismuth, alabaster, oxide of zinc, etc., are mineral powders, and are indeed mineral paints disguised under attractive names.' . . . Mineral powders adhere much better to the skin than do vegetable ones; hence, perhaps, their employment in so many advertised kinds. Rice powder has very little adhesiveness, but corn starch forms the base of nearly all face powders. This, and indeed all, is highly absorbent, and takes up not only any superfluous moisture but also the natural oil of the skin, and this is why its daily and persistent use dries up the skin and diminishes its softness and pliancy."

The application of glycerine to the skin prior to applying the powder, for the purpose of making it stick, is denounced as being as a rule "more injurious."

Feathered women have been recently condemned for denuding our forests and groves of our loveliest songsters for the sake of gratifying a grossly-perverted taste, and it appears that powdered women add their quota of cruelty and vandalism by robbing our lakes and ornamental waters of their most fascinating object, the stately swan. It appears that powder puffs "are made of down taken from swans, and in England, to supply the demand for these, no fewer than 5,000 swans are killed yearly."

Women who intentionally conceal shortcomings in symmetry, features and complexion by art, are practicing a system of black-magic upon the opposite sex for the purpose of deluding them into believing them to be possessed of charms, which they are not. Reliance upon this method of capturing a husband, apparently makes it unnecessary for them to make the most of their beauty by leading pure, simple and hygienic lives, and by cultivating and developing themselves spiritually, which ever adds an indefinable charm, even where beauty of feature is not. The idea of acquirement of beauty by art extinguishes the remembrance of the requirements of wife and mother. A powdered and painted doll entering the sacred duties of matrimony, all unprepared, save with powder and puff, manicure implements and corsetted waist, is like making a dancing-master captain of a ship. No matter how substantial her home surroundings, no matter how sea-worthy his vessel, lives are in danger, and a wreckage, sooner or later, must result. No degree of skill in tight lacing or pirouetting can avail ought. The danger of letting woman throw her glamor over reason of man by captivating his irresponsible senses, seemed to dawn upon the minds of some more guarded souls in 1770, who tried to pass a parliamentary bill decreeing that "all women who impose upon or betray into matrimony any of his Majesty's subjects by the use of cosmetics, powders, paints, washes, scents, Spanish wool, iron stays, hoops, high-heeled boots, bolstered hips, shall incur the penalty of the law now in force against witchcraft and like misdemeanors, and that the marriage upon conviction shall stand null and void."

If the law were to hold parents responsible for the health of their children, men and women would quickly learn to think more of the aristocracy of health than that of a monied or titled ancestry, and partners would be selected for their thrift in the use and accumulation of capital in their bank of health. The truths underlying these every-day triflings with life are greater than the vast majority of mankind care to own unless brought face to face with them by enforced full personal responsibilities.—*Herald of Health.*

THE GAME OF FOOT-BALL.

The *Brooklyn Medical Journal* thus speaks of foot-ball:

Hardly a day passes that there is not chronicled in the newspapers some severe accident to a foot-ball player, and in a large number of instances the result of injuries received is a fatal one. The popularity of the game among college students is so great that we fear college professors are rather disinclined to interfere with what, we are sure, they must regard as an excess of physical exercise. But there can be no doubt that unless something is done to restrain the enthusiasm of the students, the game will become so unpopular that nothing but its complete abandonment will satisfy a public which is already beginning to ask why such practices are allowed. The game properly played is one which is well calculated to do good to those who engage in it, and it has deservedly obtained a place among the manly sports from time immemorial, and those are its true friends who see the dangers which attend it as now practiced, and call for its modification. The game has come to be, not a strife between teams, but a contest between individuals, and in the arrangement of the contestants, selections are made of individuals to oppose individuals, until the game amounts to a series of fights, such as we hear of in the prize ring, only that in the modern game of foot-ball one can see at one time, and for the payment of a single admission fee, as many contests as there are opposing couples.

We are led to the above reflections by paragraphs of which the following are examples:

Jersey City, N. J., Nov. 30.—During the progress of a game of foot-ball on the Newark Bay shore this afternoon, Edward French, 14 years old, of Linden avenue, fell and broke his right thigh. He was taken to the City Hospital.

Hartford, Conn., Nov. 29.—John White, the young man who was injured in a foot-ball game at Farmington on Saturday, Nov. 28, died tonight at the Hartford Hospital. He played on the Farmington Athletic Club team, and the game was with the Yale Seniors. The accident happened during a scramble, when White had the ball and fell underneath. His head was jammed down so that a serious accident to the spine was caused, resulting in paralysis. He was helpless up to his death.

That this view which we here express is in accord with that of others, is shown by the following extract from the annual report of the superintendent of the military academy at West Point:

"Several rather severe casualties happened in outdoor games and in exercises at will in the gymnasium. Foot-ball contributed the bulk of such casualties, and in some cases the injuries were of such gravity as to threaten permanent disabilty, but, happily, in every instance complete recovery ultimately resulted.

"It is doubtful, in my opinion, if the benefits derived from playing this game, which I am free to acknowledge are very considerable in some directions, are commensurate with the risks it entails to life and limb, which, according to statistics, are much greater than are commonly supposed."

DON'T.

Under this singular title an exchange publishes the following wise cautions:

Don't go to bed with cold feet. Don't sleep in the same undergarments that are worn during the day. Don't sleep in a room tha is not well ventilated. Don't sit or sleep in a draught. Don't lie on the left side too much. Don't lie on the back to keep from snoring. Don't try to get along with seven or eight hours' sleep out of twenty-four. Don't jump out of bed immediately on awakening in the morning. Don't forget to rub yourself all over with a crash towel or hands before dressing. Don't forget to take a drink of pure water before breakfast. Don't take long walks when the stomach is entirely empty. Don't start to do a day's work without eating a good breakfast. Don't eat anything but well cooked and nutritious foods. Don't eat what you don't want just to save it. Don't eat between meals nor enough to cause uneasiness at meal times. Don't eat the smallest morsel unless hungry, if well. Don't try to keep up on coffee or alcoholic stimulants when nature is calling you to sleep. Don't stand over hot air registers. Don't inhale hot air or fumes of any acids. Don't fill the gash with soot, sugar, or anything else to arrest the hemorrhage when you cut yourself, but bring the parts together with strips of adhesive plaster. Don't wear thin hose or light-soled shoes in cold, wet weather. Don't strain your eyes by reading on an empty stomach or when ill. Don't ruin your eyes by reading or sewing at dusk, by a dim light, or flickering candle, or when very tired. Don't sing or halloo when your throat is sore or you are hoarse. Don't drink ice water when you are very warm, and never a glassful at a time, but sip it slowly. Don't take some other person's medicine because you are similarly afflicted. Don't eat in less than two hours after bathing. Don't call so frequently on your sick friend as to make your company and conversation a bore. Don't make a practice of scandal, or stories calculated to depress the spirits of the sick. Don't forget to cheer and gently amuse invalids when visiting them. Don't call on your sick friend and advise him to take some other medicine, get another doctor, eat more, eat less, sit up, or talk him to death before you think of leaving.

In walking or other exercise learn to keep your mouth firmly closed and to breathe entirely through the nose. You can walk as far again with less fatigue and without getting out of breath, than when you breathe through the mouth. Try it.

The best three medicines in the world are warmth, abstinence and repose.

MEDICAL.

TO CURE A STY.

To cure a sty, take the white of an egg on a saucer and rub into it a small pinch of powdered alum. It will become a curd. Put it between two fine pieces of muslin lawn and bind it over the eye before retiring for the night. In the morning the sty will be gone or much better. One more application will be sufficient and no more sties will come.—*Ex.*

CHEMICAL SYNONYMS OF NEW REMEDIES.

The following is taken from the very complete list contained in the second (enlarged) edition of Professor Kobert's admirable work, "Compendium der Arzneiverordnungslehre." (Ferdinand Enke, Stuttgart, 1893):

Alumnol: Naphtholsulfonate of aluminium.

Analgen: Ortho-æthoxy-monobenzoylamidochinolin.

Angioneurosin: Nitroglycerin.

Antifebrin: Acetanilid.

Antinervin: Mixture of acetanilid, ammonium bromide, and salicylic acid.

Asaprol: Beta-naphthol-monosulfonate of calcium.

Bromopyrin: Mixture of caffeine, antipyrin and sodium bromide.

Cancorin: Solution of citronate of neurin and phenol.

Cannabinon: Soft resin from *Cannabis Indica*.

Chlorobrom: Solution of six parts bromide of potash and six parts chloralamid in fifty-eight parts of water.

Creolin: Mixture of cresolsulphuric acid with tarhydrocarbons.

Cresolin: Creolin-like mixture.

Eulyptol: Mixture of six parts salicylic acid, one part phenol, and one part eucalyptus oil.

Europhen: Isobutyl-orthocresol-iodide.

Formalin: Forty per cent solution of formaldehyde.

Gallanol: Anilid of pyrogallic acid.

Gallol: Impure Gallanol.

Hæmatogen Hommel: A blood preparation with no similarity to the hæmatogene of chemistry.

Hopein: A swindle mixture of morphine, cocaine, etc.

Keratin: Purified horn-substance.

Kersin; Solution of cresol in cresolacetate of sodium.

Lipanin: Mixture of olive oil with six per cent free oleic acid.

Lysol: Liquid containing cresol with soap.

Myrrholin: Solution of resin of myrrh in castor oil.

Salophen: Salicylate of acet-par-amido-phenylæther.

Saprol: Mixture of crude cresols with carbonates.

Solvelo: Cresol rendered soluble with cresotinate of sodium.

Somnal: Alcoholic solution of chloralurethane.

Sulfonal: Diæthyl-sulfon-dimethyl-methane.

Tetronal: Diæthyl-sulfon-diæthyl-methane.

Thiol: Sulphuretted unsaturated hydrocarbons of the lignite-tar oils rendered soluble with sulphuric acid.

Trional: Diæthyl-sulfon-æthyl-methyl-methane.

It is related of Dr. Schweninger that many years ago, the first time Bismarck went to consult him, he asked his new patient many questions that the Iron Chancellor, who was not accustomed to be cross-questioned in this fashion, got impatient, and said "he came to be cured and not catechised." "Oh," replied Dr. Schweninger, coolly, "then you had better go to a veterinary surgeon; he's the only doctor I know of who cures his patients without asking them any questions."

CONSUMPTION.

SOMETIMES CALLED "TUBERCULOSIS," "PHTHISIS," "PHTHISIS PULMONALIS," "TUBERCULAR PHTHISIS," "TUBERCULAR CONSUMPTION," OR "PULMONARY CONSUMPTION."

ITS RESTRICTION AND PREVENTION.

[Leaflet Issued by the Michigan State Board of Health.]

Consumption is the most common and fatal disease. In Michigan, it causes more deaths than any other disease. According to the Registration reports, issued by the Secretary of State (1887, p. 231), the average annual number of deaths from consumption in this State for the nineteen years, 1869–1887, is 1,698; but it is believed that not more than two-thirds of the deaths are reported, so that the number of deaths which actually occur in Michigan from consumption is probably over twenty-five hundred per year. A large part of this mortality can be and ought to be prevented.

Consumption is now known to be a communicable disease, in which, frequently, the contagium is carried from the dried sputum of a consumptive to the lungs of a susceptible person, where it grows and multiplies and thus produces the disease. The germ which causes consumption is called the *Bacillus tuberculosis*, and it is present in the sputa of consumptives. These bacilli are from about one twenty-thousandth to about one ten-thousandth of an inch in length, and their breadth is about one-sixth of their length. (From 1.5 to 3.5, by .4 micro-millimeters) These bacilli have been thoroughly studied, and by inoculations with them the disease has repeatedly been caused in lower animals. Interesting experiments have been made in this connection by Dr. George Cornet, of the Berlin Hygienic Institute, with the dust of rooms inhabited by consumptives. Dust, collected from those surfaces not likely to be contaminated directly by the spitting or coughing of the patient, was mixed with sterilized bouillon and injected into the peritoneal cavity of guinea pigs. Forty days later the animals were killed, and a careful necropsy was made. Twenty-one hospital wards, in which there were consumptive patients were examined in this way, and from the dust of fifteen of them, tuberculosis was set up in the guinea pigs experimented upon. Private houses where consumptives lived gave similar results; where patients have been in the habit of expectorating on the floor, the dust from the walls was certain to yield infectious cultures, but where cloths or spittoons had been used this was not the case.

The mode of communication of this disease is mainly from the dried sputa from consumptives. The germs in the sputa are carried into the air by sweepings, and deposited upon walls or contents of rooms, or find their way to the lungs of persons.

Destruction of the sputa.—It is evident that the only certain preventive of consumption is to destroy the sputum from the consumptive before it has an opportunity to dry and scatter the seeds. It is for the consumptive's own safety to destroy the sputa, because it reduces to a minimum the possibility of re-infection. Any person who has an habitual cough, and raises sputa, should have a microscopical examination of the sputa, to ascertain whether it contains the *Bacillus tuberculosis*. Without waiting for such examination, in all such cases the sputa should be disinfected.

How the sputa should be destroyed.—No consumptive should expectorate on the floor. Cuspidors, in hotels and other public places and in rooms occupied by consumptives, should be partly filled with water. They should be washed twice each day in boiling water, and the contents should be disinfected with a solution of bichloride of mercury. The cuspidor might well contain constantly a disinfectant, such as a five per cent solution of carbolic acid—one ounce of carbolic acid dissolved in a pint and a half of water.

The consumptive should carry small pieces of cloth (each just large enough to properly receive one sputum) and paraffined paper envelopes or wrappers in which the cloth, as soon as once used, may be put and securely enclosed, and, with its envelope, burned on the first opportunity.

Destruction of the dejecta.—All dejecta of a consumptive person should be destroyed or disinfected; because it has been shown that the bacilli are to be found in the urine of persons having tubercular disease of the urinary organs, and in the fæces of those having tubercular disease of the bowels, and they may be in the fæces of those who swallow sputa containing the bacilli, that is, possibly, of any consumptive. Disinfect each discharge from the bowels by thoroughly mixing with it at least one ounce of chlorinated lime in powder, or one quart of "Standard Solution No. 1" recommended by the American Public Health Association's Committee.*

Ventilation of buildings.—Through better systems of ventilation, much may be done for lessening the number of micro-organisms inhaled with the dust of floors, carpets, etc., especially by having the foul-air exits at the floor level, so that the general motion of the foul air shall be downwards, and not upwards into the nostrils of the inmates of the room. This is especially important with reference to all public buildings, as, also, that they shall constantly have a liberal supply of fresh air.

Personal precautions.—Those who sweep and dust rooms which consumptives have occupied might well use respirators. Much may be done to lesson the liability to contract cansumption by having the sanitary surroundings as nearly perfect as possible, and by keeping the lungs strong and healthy. It is stated that "in no less than 60 per cent of all patients dying at Bellevue hospital there were old tubercular changes in the lungs, the disease having been recovered from." Similar observations have been made at the Philadelphia hospital, and at the Paris morgue.

Dr. Trudeau's experiments prove that rabbits inoculated with the *Bacillus tuberculosis* and kept in a cellar-like place, on restricted diet, died of the disease in much greater proportion than did similar animals similarly inoculated but kept in the open air with an abundance of food. These facts emphasize the importance of pure food, pure air, and healthful exercise.

Exposure to cold should be avoided.—Statistics of sickness and of deaths, collated with meteorological statistics, seem to prove that the consumptive processes go on most actively after times of low atmospheric temperature, and least actively after times of high atmospheric temperature. This makes it important that consumptives, and persons susceptible to consumption, should especially guard against the inhalation of cold air. It enforces the importance of having such persons spend the winter and spring months in a climate warmer than that to which they have been accustomed.

Disinfection.—The dusting of objects in the room, the cleansing of the floor, walls, or ceiling of the living or sleeping room of a person suffering from pulmonary consumption should be deferred until after the room and contents have been subjected to the fumes of burning sulphur.

The unwashed clothing of a consumptive should not be mingled with the unwashed clothing of another person; care should be taken that the handkerchiefs be boiled, that other articles liable to harbor the bacillus shall be disinfected, and that no virus come in contact with a cut or injured hand.

No one should sleep in the same room with a consumptive patient, or in a room which has been occupied by a consumptive, unless the room has been previously subjected to the fumes of burning sulphur. A room which has been occupied by a consumptive person may well (with all its contents) be thoroughly disinfected, first subjecting it, for twenty-four hours, to strong fumes of burning sulphur, and then it should for several hours be exposed to currents of fresh air. After fumigation the walls may be rubbed with bread crumbs, which should then be burned.

Rooms to be disinfected by sulphurous fumes must be vacated. For a room ten feet square at least three pounds of sulphur should be used; for larger rooms proportionately increased quantities at the rate of three pounds for each one thousand cubic feet of air space.

Hang up and spread out as much as possible all blankets and other articles to be disinfected; turn pockets in clothing inside out, and otherwise facilitate the access of the sulphurous fumes to all infected places.

Close the room tightly, place the sulphur in iron pots or pans which will not leak, supported upon bricks over a sheet of zinc or over water in a tub or pan, so that in case melted sulphur should leak out of the pot the floor may not be burned; set the sulphur on fire by hot coals or with the aid of a spoonful of alcohol lighted by a match; be careful not to breathe the fumes of the burning sulphur, and when certain the sulphur is burning well, leave the room, close the door, and allow the room to be closed for twenty-four hours.

Boil milk from suspected sources.—While by far the greater number of cases of consumption are caused by the inhalation of the germs of the disease from the dried sputa, the disease may be communicated by the use of milk from tubercular animals. The bacilli of consumption have been found in the milk of cows affected with tuberculosis of the udder. Experiments indicate that, while heating the milk to 167 deg. F. so weakened the virus that six rabbits which drank the milk did not show any traces of the disease, boiling the milk will destroy these germs. These experiments render it important that all milk from suspected sources be boiled before being used.

Tuberculous meat.—The Paris Congress, for the study of tuberculosis in man and in animals, voted almost unanimously that the flesh from tubercular animals should be destroyed, even where the disease is only localized, if a large part of the organ is affected. Not only should all meat from tubercular animals be destroyed, but all meat from an unknown source should be thoroughly cooked.

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* "Standard Solution No. 1" is made by adding to each gallon of soft water four ounces of chloride of lime of the best quality, which should contain at least 25 per cent of available chlorine. "Use one quart of this solution for the disinfection of each discharge in cholera, typhoid fever, etc. Mix well and leave in vessel for at least one hour before throwing into privy-vault or water-closet."

MEDICINE AS PRACTISED BY THE LOWER ANIMALS.

BY DR. R. E. ANDERSON, ROCKVILLE, MD.

It would seem as if a man was surrounded by danger, seen and unseen, throughout his entire life. From the cradle to the grave it is a struggle. In the vegetable kingdom also the same struggle for existence is seen. Every flower has its destroying insect; for every shrub there is a worm, and for the ripening watermelon the little colored boy lies in wait. But if disease threatens man on every hand, equally close at hand is the remedy with healing power, and not only do the so-called inferior human races appear to recognize this, but even dumb animals, and it would seem as if the latter, in an imperical way of course, practiced medicine.

Animals instinctively choose such food as is best suited to them, and to a certain extent the human race also shows this instinct, and medical men are sometimes at fault in not paying sufficient respect to the likes and dislikes of their patients. Women, as a rule, are more often hungry than men, and they do not like the same kinds of food; nevertheless, men and women are generally put on precisely the same regimen, especially in public institutions. Infants scarcely weaned are given a diet suitable to adults, which they dislike, and which disagrees with them. Some years ago Delaunay investigated this question in the different asylums of Paris, and ascertained that children, although they will generally eat it, do not like meat before they are about five years of age. People who like salt, vinegar, etc., may generally be allowed to satisfy their tastes, within moderation. Lorain always taught that with regard to food, people's likings are the best guide.

A large number of animals, such as elephants, stags, birds, and ants, wash themselves and bathe. Launay lays down as a general rule that there is no species of animals which voluntarily runs the risk of inhaling emanations arising from their own excrement. If we turn to the question of reproduction we find that all mammals suckle their young, keep them clean, wean them at the proper time, and educate them; maternal instincts which are frequently wanting or rudimentary in women even of civilized nations. In fact, man may often take a lesson in hygiene from the lower animals. Animals get rid of their parasites by using dust, mud, clay, etc. Those suffering from fever restrict their diet, seek darkness and airy places, drink water and sometimes plunge into it. When a dog has lost its appetite it eats that species of grass known as dog's grass (*chiendent*), which acts as an emetic and purgative. Cats also eat grass. Sheep and cows, when ill, seek out certain herbs. When dogs are constipated they eat fatty substances, such as oil and butter, with avidity. The same instinct is observed among horses. An animal suffering from chronic rheumatism always keeps as far as possible in the sun. The warrior ants have regularly organized ambulances. Latreille cut the antennæ of an ant and other ants came and covered the wounded part with a transparent fluid secreted from their mouth. If a chimpanzee be wounded it stops the bleeding by placing its hand on the wound or dressing it with leaves and grass. When an animal has a wounded leg or arm hanging on, it completes the amputation by means of its teeth. A dog on being stung in the muzzle by a viper was observed to plunge its head repeatedly for several days into running water. The animal eventually recovered. A sporting dog was run over by a carriage. During three weeks in winter it remained lying in a brook, where its food was taken to it; the animal recovered. A terrier dog hurt its right eye; it remained lying under a counter, avoiding light and heat, although habitually it kept close to the fire. It adopted a general treatment, rest and low diet. The local treatment consisted in licking the upper surface of the paw which it applied to the wounded eye, again licking the paw when it became dry. Cats also, when hurt, treat themselves by this simple method of applying continuous irrigation.—*Mass. Med. Journal.*

EMERGENCY TREATMENT OF A TOOTHACHE.

Toothache is a little thing in the books, but many physicians would rather meet a burglar at the door on a dark night than a call to cure a bad toothache of several days' continuance; a hypodermic of morphine only postpones the evil day, and usually the patient is respectfully referred to the dentist. The tooth should not be extracted while the jaw and gums are inflamed and the latter swollen, and it is the physician's duty to treat the case until the above conditions are removed. Always keep a small phial containing the following mixture: Chloroform, gtt. x.; glycerine, gtt. x.; sat. sol. ac. carbol., gtt. x.; morphine, gr. j., with a small wad of absorbent cotton. If the offending tooth has a cavity or decayed surface, saturate a small pellet of cotton with the above mixture and put into the cavity or against the decayed surface as the case may be, never pack the cotton in, or the more is the trouble—but have the pellet small enough to enter without crowding. In most cases this will end the trouble. When the gums are swollen and tender paint two or three times, two minutes apart, with a four per cent solution of cocaine. This time of year your patient may have been eating a good deal of fruit. The tongue and mucous membrane of the mouth are pale, sour stomach, and next day the toothache will return. Give ten grains of sub-carbonate of bismuth and ten grains of phenactin at once and a similar dose before each of the three following meals, with a laxative if needed, and stop all fruit for a few days, and it will not return. The same powder every two hours with cessation of fruit eating will stop the persistent, tormenting neuralgias so prevalent at this season.—*Jno. E. Weaver, M. D., of Rochester, N. Y., in Med. Record.*

FOOD POISONS.

M. Juhel Renory (*Annales d'Hygiene Publique*, August, 1893) analyses the symptoms which supervene after the ingestion of unsound meat, especially pork. He finds the effect proportionate to the quantity taken, unless putrefaction continues in the alimentary canal owing to the inactivity of the digestive processes. He considers the fundamental symptoms to be (1) fœtid diarrhæa, nausea, vomiting (accompanied by a feeling of loss of power), some hours after partaking of the suspected food. (2) After an interval of twenty-four hours polymorphic eruptions appear (urticarial-scarlatinal roseolous), with or without fever. The erythema multiforme of Hebra may be thus caused. (3) In serious cases a typhoid condition occurs—stupor, delirium, digestive derangement, hemorrhages, feverishness. (4) In a more advanced stage—recovery being still possible—all the complications of specific fevers may develop, chiefly localized on serous-membranes. (6) The only necessary condition is the introduction into the organism of poisons originating in food—particularly through putrefactive changes.

KICKAPOO INDIAN OIL.

According to the *New Idea* a similar preparation may be made by the appended recipe:

Camphor	½ ounce
Oil of turpentine	1 dram
Oil of peppermint	½ dram
Oil of wintergreen	½ dram
Tincture of capsicum	½ ounce
Alcohol, sufficient to make	1 pint

ECZEMA.

By Dr. Lustgarten.

Oleate of cocaine	10 to 15 gr.
Lanoline	3 dr.
Olive oil	½ dr.

This is to be made into an ointment, and will be found particularly useful in eczema of the anus and genital organs. Two applications a day are to be made, and followed by dusting the parts with dry absorbent powders. If there is much secretion, with the formation of scabs, warm baths may be used and the foreign materials removed by either mild or strong soaps, as the case may require.

INVENTIONS, SCIENCE, ETC.

GLITTER OF THE DIAMOND.

Sir R. Ball, who has a remarkable faculty of bringing the wonders of science to the full comprehension of the popular mind, has been discoursing on the mysterious action of molecules, and, as usual, has hit upon the most fascinating illustration possible of the theories which he propounds. Taking for granted the fact that everybody is composed of a multitude of extremely, but not infinitely, small molecules, it might naturally be inferred that in a solid, at all events, the little particles must be clustered together in a compact mass.

But the truth is far more wonderful. Taking the diamond as a text for his remarks, Sir R. Ball tells us that were the sensibilities of our eyes increased so as to make them a million times more powerful, it would seem that the diamond atoms, which form the perfect gem when aggregated in sufficient myriads, are each in a condition of rapid movement of the most complex description. Each molecule would be seen swinging to and fro with the utmost violence among the neighboring molecules, and quivering from the shocks it receives from the vehement encounters with other molecules, which occur millions of times in each second.

We are further told that the well-knowm impenetrability of the gem arises from the fact that when an attempt is made to press a steel point into the stone it fails because the rapidly moving molecules of the stone batter the metal with such extraordinary vehemence that they refuse to allow it to penetrate or even mark the crystallized surface When glass is cut with a diamond the edge which seems so hard is really composed of rapidly moving atoms. The glass is also a mass of moving molecules, and what happens is that as the diamond is pressed forward, its several particles, by their superior vigor, drive the little particles of glass out of the way.

HOW TO EXTINGUISH FIRE.

Take twenty pounds of common salt and ten pounds of sal ammoniac (muriate of ammonia, to be had of any druggist), and dissolve in seven gallons of water. When dissolved, it can be bottled, and kept in each room in the house, to be used in an emergency. In case of a fire occurring, one or two bottles should be immediately thrown with force into the burning place so as to break them, the fire will certainly be extinguished. This is an exceedingly simple process and certainly worth a trial.—*Med. and Surg. Reporter.*

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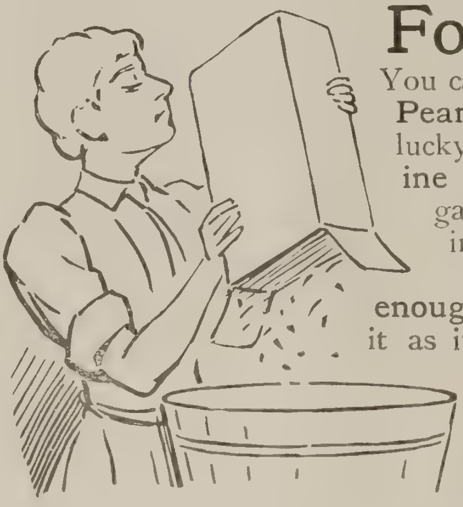
Oh, would some power the giftie gie us
To puzzled man the why unfold
A furnace always booms on warm days
And can't be made to burn on cold.

CAUSE AND EFFECT.

"I don't understand why it is," remarked a gentleman the other day, while contemplating an unsightly sore upon his left hand, "but wounds in my flesh do not heal as they used to. That was nothing but an insignificant little pimple. I squeezed its head off, as I have many others before, expecting it to promptly disappear, as usual, but you see it has not done so."

He did not appear to realize that the easily disposed of pimples were the gentle hints of patient, long-suffering Nature that his blood was impure and that this most obstinate and persistent one was simply a stronger warning. Nature is always slow. Violently sudden as some of her effects seem to be, we are apt to overlook the time during which they have been developing, through a chain of alternate causes and effects, to the resultant climax which astonishes us. But her magic may be, by intelligent observation and analogy, traced throughout. So we may, viewing the apparently trivial pimple, look backward to the malefic causes behind it, and forward to the very possibly terrible consequences yet to follow in due course. The germs of the most contagious and infectious diseases are not more certain to cause illness, and perhaps death, than are the impurities distributed by the blood, throughout the entire system, when the action of the eliminative and excretory organs becomes impaired and the functions of the assimilative system consequently perverted. The effete matter resultant from the natural waste of life and the foreign matter taken up by the now non-discriminative organs of assimilation, clogs and taints the blood, and when carried through the system by it are liable to first manifest their presence by just those ugly little pimples. Each one plainly tells its story. A malign particle, borne by the blood to a point in one of its myriad microscopic channels, near the surface, where it can no longer pass, has set up at the spot of its lodgment a local inflammation and consequent suppuration of tissue, which is Nature's method for opening a way for its ejectment. Pimples, boils, carbuncles and malignant pustules all tell the same story, and ulcers, too, except in rare cases, comparatively—when they come from specific infections. Of course, the re-absorption of virulent matter from those suppurative processes is apt to increase the danger by still further poisoning of the blood. And the effects of these evil particles of effete and foreign matter may, instead of such superficial manifestation, find demonstration in yet more grave effects within. Deposited by the sluggish blood in the minute channels of the brain, they produce their "clot," or "embolism," which, as every one knows, induces paralysis and death. Accumulating in fibrinous masses, they reach the heart and stop the action of its valves—and, consequently, life. They cause deep-seated inflammations in every sort of tissue dependent upon the blood for its life, and so inevitate a host of painful and dangerous diseases—are, in fact, the cause of nearly all the physical ills to which humanity is subject.

The first pimple seen should be viewed as an earnest call by Nature for the aid of a potent blood alterative, and to meet this requirement curative science knows no medicine equal to Ayer's Compound Extract of Sarsaparilla.



Foolish Woman!

You can't spare the time to measure your **Pearline**? Well, that helps us, but it's lucky for you that an overdose of **Pearline** does no harm. It's only extravagance. Beware of a dose of the imitations.

You can get just as good work with **enough Pearline** as with **too much**. Use it as it ought to be used, and don't waste it, and you can't think that it's expensive. To get the best results from **Pearline**, use it just as directed. You'll save more of everything than with anything else. If your grocer sends you an imitation, **return it, please.** 388

Indigestion

Horsford's Acid Phosphate

Is the most effective and agreeable remedy in existence for preventing indigestion, and relieving those diseases arising from a disordered stomach.

Dr. W. W. Gardner, Springfield, Mass., says: "I value it as an excellent preventative of indigestion, and a pleasant ascidulated drink when properly diluted with water and sweetened."

Descriptive Pamphlet free.

Rumford Chemical Works, Providence, R. I.

Beware of Substitutes and Imitations.

For Sale by all Druggists.

THE HUMAN BREATH.

The following experiment demonstrated the elementary power of the human breath: Take a large bag of good heavy paper, lay it on the table and cover the closed end of it with several books—a Webster Unabridged and a family Bible, for instance; then blow into the bag, filling or inflating it with air, and you will soon see that it will overthrow the books—that is, remove a small mountain.

◆

When you want to find a coward, hunt up the man who knows he is wrong.

The woman who talks about her neighbors is no worse than the one who listens.

Working without a plan is one of the best ways in the world to waste your strength.

"Know thyself" is good advice, but "know about your neighbors," is the general practice.

There are so many men who become very pious whenever God gets them in a tight place!

The man who tries to go around all the mountains on his way to heaven will have a very crooked road.

◆

STATE OF OHIO, CITY OF TOLEDO, } ss.
LUCAS COUNTY,

Frank J. Cheney makes oath that he is the senior partner of the firm of F. J. Cheney & Co., doing business in the city of Toledo, county and State aforesaid, and that said firm will pay the sum of One Hundred Dollars for each and every case of Catarrh that cannot be cured by the use of Hall's Catarrh Cure.

FRANK J. CHENEY.

Sworn to before me and subscribed in my presence, this sixth day of December, A. D. 1886.

{ SEAL }

A. W. GLEASON,
Notary Public.

Hall's Catarrh Cure is taken internally and acts directly on the blood and mucous surfaces of the system. Send for testimonials, free.

F. J. CHENEY & CO., Toledo, O.

☞Sold by druggists, 75c.

VINEGAR.

While vinegar is used in the daily meal, yet it passes as something never questioned and little known about. It is a condiment upon which much of the delicate flavoring of food depends. Its mere "acidity," however, is not the only requisite to a good quality. Originally vinegar, as its name implies, was made only from wine. It was the only acid known to the ancients In 1648 Glauber, the celebrated chemist, speaks of a product obtained by the dry distillation of wood in a way which shows his appreciation of its identity with vinegar, and states that by rectification it can be made as good as wine vinegar.

It is very difficult, in modern manufacture, says *National Grocer*, to give a precise definition of this product. The so-called vinegars of commerce may be chemically divided into two classes: those which are the consecutive alcoholic and acetous fermentations, and those which are not. Under the first class come those made from, first, wine; second, spirits; third, malt-wort or beer; fourth, fermented fruit juices other than wine; and fifth, sugar beets. Under the second class, vinegar manufactured from the destructive distillation of wood forms the chief variety.

The wines used are both red and white, of inferior quality, or considered unfit for drinking. New wines are not good for this purpose, as they are apt to undergo putrid or ropy fermentation. In addition to acetic acid, the wine vinegar contains various acids, but especially tartaric and succinic, the latter imparting the peculiarly agreeable flavor and odor. The spirits used are chiefly the potato brandy of Germany and whisky in this country. This makes really an artificial wine vinegar containing only water, acetic acid and a small quantity of ascetic ether. Cider and perry are about the only fruit juices besides wine fermented for the production of vinegar. Malic acid is its characteristic flavoring element. Beer, grain, or malt-wort vinegar contains extractive matters, as dextrine, nitrogenous substances, and phosphoric acid. Sugar beets are used somewhat in France.

At the present time the Society of Public Analysts of London is investigating the manufacture of vinegar. They do not enter upon a hygienic examination, but urge the necessity of government inspection and proper labeling; the same point that has so frequently been urged in the bulletins of the United States Agricultural Department The fictitious vinegars are mostly pyroligneous acid, with acetic ether added as a flavoring, fusel oil, oil of cloves, and butyric acid added to give aroma. Sulphuric acid is sometimes found in cheap vinegars, its purpose being more to prevent putrefaction than an adulteration.

Briefly, the theory of the manufacture of vinegar is this: All oxidizing agents convert alcohol first into aldehyde and then into acetic acid. Fermented liquors, when exposed to the air, soon become sour. This depends upon the fact that they contain nitrogenous compounds which act as carriers of atmospheric oxygen. This, however, can only take place when the percentage of alcohol does not exceed a certain limit. It is for this reason that strong wine, such as port or sherry, does not become sour on exposure to air. This oxygen-carrying body is the ascetic ferment. This ferment is always floating in the air, and when it falls into conditions suitable for its development it very rapidly multiplies. These ferments grow on the surface of the liquid where the oxygen is, forming a gelatinous skin, which by its increasing weight falls to the bottom. Another skin forms and this process goes on till the liquid is exhausted of its assimilable material. The skin, called the "mother of vinegar," consists of a multitude of the minute ferments. One hundred pounds of alcohol require 300 pounds of air to convert it into active acid.—*Pharm. Era.*

THE USES OF SALT.

Salt and water will sometimes revive a person when unconscious from a hurt. Salt in tepid water is a good emetic. For poisoning with alcohol an emetic of warm water and salt should be frequently given.

A teaspoonful of salt in a glass of water is a cure in many stomach troubles, relieving colic and helping indigestion.

A bag filled with salt and heated is a great comfort to any one suffering from neuralgia. There is nothing more restful to tired eyes than a bath of warm salt and water.

If the head be washed occasionally with salt and water, it will lessen the falling out of the hair. Salt added to the bath will be found almost as invigorating as an ocean dip.

If the carpets be sprinkled with salt before sweeping, it will be found that no such dust will arise, and that the carpets are wonderfully brightened.

Salt thrown on soot will extinguish the flames. If it be sprinkled on the stove when the kettle has boiled over it will prevent all disagreeable odors. If sprinkled on the coals when meat is to be broiled it will make the fire clear and bright.

To remove claret stains put salt on immediately and quickly over the place. Rinse in cold water before washing.

To remove egg stains from spoons rub with moist salt.

A little salt in the water in which flowers are placed will help to keep them fresh for a long time.

If straw matting be washed over with salt and water it will look like new.

These are some of the very numerous ways in which salt is an aid to us. It is so common that it is within the power of every one to keep it for emergencies, as well as for cooking.

TWIN REMEDIES

BUFFALO LITHIA WATER AND HOT SPRINGS WATER

In Bright's Disease, Uric Acid Diathesis, Gout, Rheumatic Gout, Rheumatism; their value in Calculi.

Dr. Algernon S. Garnett, *Surgeon (retired) U. S. Navy, Resident Physician, Hot Springs, Ark., says:*—"My experience in the use of BUFFALO LITHIA WATER is limited to the treatment of Gout, Rheumatism and that hybrid disease 'Rheumatic Gout' (so-called), which is in contradistinction to the Rheumatoid Arthritis of Garrod.

"I have had excellent results from this Water in these affections, both ***in my own person and in the treatment of patients for whom I have prescribed it.*** Of course the remedial agent is its contained Alkalies and their solvent properties.

"Hence it is a prophylactic as well as a remedy in Nephritic Colic and forming Calculi, when due to a redundancy of Lithic Acid."

Dr. Wm. B. Towles, *Professor of Anatomy and Materia Medica in the Medical Department of the University of Virginia, former Resident Physician, Hot Springs, Va., says:*—"I feel no hesitancy whatever in saying that in Gout, Rheumatic Gout, Rheumatism, Stone in the Bladder, and in all Diseases of Uric Acid Diathesis, I know of no remedy at all comparable to BUFFALO LITHIA WATER.

"Its effects are marked by causing a disappearance of the Albumen from the urine. In a single case of Bright's Disease of the Kidneys, ***I witnessed decided beneficial results from its use,*** and from its action in this case I should have great confidence in it as a remedy in certain stages of this disease."

The late Dr. Wm. F. Carrington, *Resident Physician, Hot Springs, Ark., Surgeon (retired) U. S. Navy, says:*—"BUFFALO LITHIA WATER, Spring No. 2, has signally demonstrated its remedial power in Gout, Rheumatic Gout, Rheumatism, Uric Acid Gravel, and other maladies dependent upon the Uric Acid Diathesis.

"It not only ***eliminates from the blood the deleterious agent*** before it crystallizes, but dissolves it in the form of Calculi, at least to a size that renders its passage along its ureters and urethra comparatively easy. Send twenty cases No. 2."

Dr. T. B. Buchanan, *Resident Physician, Hot Springs, Ark., says:*—"Send me five cases BUFFALO LITHIA WATER, Spring No. 2. I have made use of this Water for Gout in my own person and prescribed it for patients similarly suffering, with the most decided beneficial results. I take great pleasure in advising Gouty patients to these Springs."

Water for Sale by All Druggists. Pamphlets sent to Any Address.

THOMAS F. GOODE, Buffalo Lithia Springs, Virginia.

WHAT CAUSES THUNDER.

"The generally accepted theory of the cause of thunder never satisfied me," said a well known physician yesterday. "It seems to me that, instead of being caused by the vacuum produced by the electric bolt going through the atmosphere, it would be more plausible to attribute it to the very reverse of contraction—to expansion.

"I mean that the facts attending the phenomenon of thunder are such as to warrant my putting forth the theory that the cause of it is the explosion of the oxygen produced by the action of the electricity upon the air. One of the arguments in favor of this theory is the great amount of ozone in the atmospere after a thunder storm. Then, if it was concussion of the air rushing in the vacuum that caused the noise, heat would be produced, whereas after every peal of thunder you will notice that a sheet of rain falls, showing that instead of heat being produced the atmosphere must get colder to produce this greater condensation.

"The explosion of the released oxygen would produce this. Then consider the nature of the noise made; to me it seems more like an explosion than concussion. I cannot conceive how electricity passing through the atmosphere could create a vacuum great enough to make a noise like thunder. This theory came to me many years ago, before electricity was so generally used. Now, the fact of being able to transmit electricity through a solid iron without even heating it seems to justify my theory regarding the formation of a vacuum."

CANNED VEGETABLES.

REPORT OF INVESTIGATIONS AND ANALYSES.

BY K. P. M'ELROY AND W. D. BIGELOW.

[Continued.]

COPPER GREENING IN FRANCE.

In 1879 Gautier published a paper which is substantially the same as the report just abstracted.

On March 15, 1878, M. Pasteur reported to the Paris prefect of police the result of the examination of twenty-five samples of canned vegetables submitted to him. Six samples were found to contain copper. Prosecutions were instituted against the vendors of these samples and the matter laid before the procureur of the Republic. He submitted samples of the goods which had been seized to a commission composed of MM. Brouardel, Riche, and Magnier de la Source. They were instructed to report as to the quantity present, to decide whether its presence constituted an adulteration, and if its presence was dangerous to health of the consumer. This committee reported in substance as follows:

"Adulteration may be defined to be the addition to an article of food of a foreign substance for the purpose of fraud or gain. Fraud does not exist in this case, inasmuch as the practice is sufficiently well known. The manufacturers whom we visited cheerfully gave all desired information. The fact of the addition has been published by Galippe and Gautier, to the latter of whom it was communicated in an official way by the president of the association of Paris canners. However, if it be not an adulteration it is certainly a violation of the law.

"In spite of the existence of the prohibitive regulations, the packing of copper-greened vegetables is a prosperous industry. Paris and its vicinage pack (yearly) 4,000,000 to 5,000,000 cans (demi-boites), each holding about 300 grams; Nantes and Brittany, 4,000,000; Bordeaux, 4,000,000 to 5,000,000; Angers, Le Mans, etc., 3,000,000 to 4,000,000, and Perigueux, Cahors, Agen, 2,000,000 to 3,000,000.

"In regard to the toxicity of copper salts, it may be said that it is almost impossible to take a dose large enough to produce death, both from their horrible taste and from the violent vomiting which they produce. In small quantities the taste is not perceptible, and the salts are not only tolerated but absorbed. Workers in copper are often completely saturated with the metal, but do not suffer from it. Experiments on the animal and human subject have never given a worse result than vomiting or a temporary fit of colic.

"Copper normally exists in the human body. It gains entrance from various foods and drinks in the absence of all adulteration. It accumulates to a certain extent, but injury from this accumulation is unknown.

"In the samples submitted copper exists to an extent varying between 16 and 45 mg per kilo.

"In conclusion, we will state that the amount of copper sulphate in the samples submitted to us does not constitute an adulteration, but that the presence of any copper whatever is illegal. The quantity found by us does not constitute a danger to health."

As a result of this investigation the procureur directed that the suits against the retailers be dropped. A letter to the prefect of police relative to the matter concludes, however, with the following words:

"Under the circumstances I submit to you the report of the expert committee, and beg of you to resubmit the question, if you think it advisable, to the Counseil d'hygiene."

In accordance with this request the counseil formed a new committee of three, consisting of MM. Poggiale, Pasteur, and Brouardel. M. Poggiale, however, died before the completion of the committee's labors. The committee submitted a report, of which an abstract follows:

"The commission is of the opinion that the Government should not assume the responsibility of allowing the use of copper salts in food unless the public be made aware of the fact. Discussion of the toxic effect of copper salts in this or that dose had been going on for a long time. Carefully conducted experiments have been made to show that copper salts are inoffensive and with apparent success. But all conclusions drawn from these experiments are appliable only to the circumstances under which they were conducted, and go only to show that this or that animal, this or that human being is insensitive to the action of copper salts. Generalizations are dangerous.

"Similar answers must be made to the question of the propriety of allowing the use of benzoic acid, salicylic acid, and the like in the food.

"There is but one way for the Government and French industry honorably to escape responsibility in this respect, and that is to require a frank declaration in each case where foreign substances are added to food. For instance, 'Petits pois conserves par tel ou tel ingredient' (peas preserved with this or that substance).

"Manufacturers would be at perfect liberty to attach any explanation they desired in the nature of expert testimony as to the harmlessness of the substance used.

"Let the industry defend itself. It can not demand that the Government give it authority for such practice when such a concession would make the Government pronounce authoritatively upon questions of hygiene as yet unsettled by science.

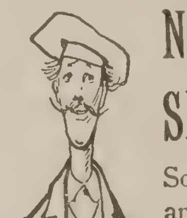
"The commission recommends that the Government tolerate the artificial greening of peas upon the condition that on each package shall be legibly printed the name of the agent employed."

The report was adopted by the Conseil.

Evidently, however, this report did not cause universal satisfaction, since on February 2, 1880, the minister of commerce and agriculture once more appealed to the long-suffering Comite consultatis d'hygiene relative to the copper question, transmitting copies of the report of Pasteur and Brouardel to the Counseil d'hygiene et de la salubrite de la Seine, and asking for an expression of opinion on it. He inclosed, further, a letter from the prefect of police to the same general purport. A commission consisting of Wurtz, Gallard, Girard, Brouardel, Chatin and Rochard was appointed to deliberate on the subject. It was to consider whether it were possible to can leguminous vegetables, producing a salable article, without use of copper salts; in what proportion copper salts were found in commercial goods and in what shape; and, lastly, if such quantities were dangerous to health. It reported, by Gallard, somewhat as follows:

"Legumes preserved by Appert's process take a color disagreeable to the eye, and in spite of their excellent quality are not liked in commerce. Greening artificially is almost a necessity.

"There are in Paris two canneries which impart to their goods a beautiful green color without the aid of copper. In one of these greening is done with a chlorophyl extracted from spinach.



Needs Shortening

So do all cooks; and the puzzle for every one of them has been how to avoid sodden pastry. The problem has now been solved by the

NEW VEGETABLE SHORTENING

Cottolene

which makes light, crisp, wholesome and easily digested pastry. The most famous cooks in the country say so, and you will also after a fair trial. Make it now.

Sold in 3 and 5 lb. pails by all grocers.

Be sure you get the genuine.

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THE AMERICAN COTTON OIL CO.

In the other the natural green of the peas is retained by a complicated process involving the use of lime sucrate, salt, soda, and sulphite of sodium. Analyses of samples from both factories were made, but in neither case was copper found.

"One of the largest of the Parisian canneries employing the copper process was visited. In the establishment 45 grams of copper sulphate are used with every 45 liters of small peas. The resulting peas on examination gave 270 mg of copper per kilo. From this it was calculated that 41.550 grams of the copper sulphate originally employed were absorbed by the peas and 3.450 grams remained dissolved in the water (120 liters) of the coppering bath.

"Copper in this great quantity was not found in other goods furnished by this factory. In these the copper descended to 170 or 180 mg, averaging about 175. Analyses of preserves from other factories gave approximately the same figures, being in one case 180 mg and in another 195. In these analyses (Chatin) the copper present in the peas alone was estimated, the surrounding liquor being poured off prior to the analysis. Other analyses, giving the copper present in the total contents of the can (Wurtz), gave 45 to 60 mg of copper. Even after calculating for the water there is a difference between the two sets of figures.

"It is claimed that a very small quantity of copper (15 to 20 mg per kilo) is amply sufficient to give the desired hue. It is also said that quantities of copper very much in excess of that necessary to color properly would give an objectionable flavor. Leguminous preserves containing 195 and 270 mg of copper per kilo do not betray it to the taste. Not only is it a fact that the copper in vegetables artificially greened can pass the limit prescribed, but it is a fact that it usually does. It would be interesting to determine by actual experiment just what degree of saturation is possible and how the limit varies with the different vegetables.

"As to the nature of the compounds of copper contained in artificially greened vegetables this is a matter of importance. They are principally insoluble albuminates, capable of being changed in the digestive process into soluble salts, readily absorbed.

"Copper is not a cumulative poison like lead, is not violently poisonous even in large doses, its action causing vomiting, colic, and possibly diarrhea of a mild type. There is great doubt as to whether death has ever been caused by copper poisoning. This, however, does not appear to be sufficient ground to the majority of the commission to cause it to admit the perfectly harmless nature of the copper present in artificially greened vegetables. It is not possible to unreservedly admit the impossibility of mild bodily derangements arising from the long continued consumption of copper. The morbid troubles which all the world knows it may cause have appeared to constitute a danger sufficiently serious to awaken the solicitude of the Government. It is thought the possibility of an error or accident in the factory, allowing the entrance into the food of sufficient of the metal to injure the consumer, is a good reason for maintaining the proscription.

"Since there are at least two processes already known by which the desired green color may be imparted to legumes without the use of copper, the commission regards it as eminently undesirable to remove the prohibition now resting upon the employment of copper and refuses to recommend the toleration, even to the amount of 18 mg. per kilo, recommended as a compromise by the Hygienic Congress of 1878.

"It is objected that the new methods are insufficient, but the commission has examined numerous samples of goods preserved by them, some of which had been kept in stock for a year, and is able to pronounce them eminently satisfactory.

"In order to judge correctly of the efficacy of various processes of preservation it is recommended incidentally by the commission that each package bear the date of packing.

"The minority in favor of the toleration of the use of copper salts suggests as a perfectly fair means of settling the question that it be required of each manufacturer to describe his process on the label and leave to the consumer the responsibility of selecting. This, it is thought, however, would amount to a prohibition and would be difficult to enforce.

"The commission reports that, after having examined the documents submitted and established the possibility of producing preserves of the color desired without the use of copper, it is of the opinion that it is inadvisable to authorize the use of salts of copper in the preparation of foods."

This conclusion was adopted by the Comité at the meeting of April 21, 1881.

The reports of Brouardel and Pasteur also stirred up the Societé de médicine publique. This body decided to pass upon the subject, and to that end formed a commission consisting of Brouardel, Bouley, Decaisne, A. Gautier, A. J. Martin, Napias, Proust, Rochard, E. Trélat, and Galippe, the last being reporter. The report received at the meeting of April 28, 1880, was in substance as follows:

"The report of Brouardel and Pasteur recommends that coppering be tolerated if the packages of food be legibly marked with a statement of the fact. Would the administration force a business man not only to reveal the secrets of his factory but stamp them on the goods offered for sale? Such an obligation could not be imposed on the packers. If the process is dangerous to health the Government can suppress it. But in the actual state of science it is impossible to prove that the health of the consumer is exposed to any risk whatever by the greening process as at present carried on.

"To advertise the presence of copper would be to ruin the canning industry, since a large part of the public still believes, in spite of expert testimony or in ignorance of it, in the toxic nature of copper and its salts.

"A can of peas contains 6 mg of copper. If eaten by three persons, each consumes 2 mg of copper, which seems insignificant, since most people do not live upon peas exclusively. Fur-

KINGSFORD'S
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"PURE" AND SILVER GLOSS For the Laundry.
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	Cimicifuga - - -	-	grs. i ½	Tr. Gelsemium	-	gtt. i.

SO PREPARED AS TO AFFORD A PERMANENT, POTENT AND RELIABLE REMEDY IN

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This preparation is especially valuable for rheumatic diathesis and in the treatment of acute inflammatory, subacute and chronic rheumatism; any of which will yield to tablespoonful doses; every three or four hours, until four doses are taken; then a dessertspoonful at a time and finally decreased to a teaspoonful every three or four hours.

In acute inflammatory rheumatism, experience has proven that two teaspoonfuls administered every four hours, until a slight ringing in the ears follows, the dose then decreased to a tablespoonful every three or four hours, will produce the desired effects.

The advantages of Elixir Salicylic Acid Comp. are afforded by the combination of Salicyclic Acid with Soda in excess, thus forming a salt less corrosive and irritating and more readily borne by the stomach.

The other ingredients possess advantages well known to the Profession to whom this preparation is alone introduced, we therefore suggest the propriety of specifying "Warner & Co.'s" and ordering in 12-oz. quantities, to obtain original bottles.

It is a matter of great satisfaction to us to be able to place before the Profession a remedy so effectual in the cure of one of our most stubborn classes of disease.

Elixir Salicyclic Acid Comp. is put up in 12-oz. square blue bottles, with prescription label on it, and may be obtained from Druggists everywhere. See that no substitutes are offered.

thermore, copper exists in the preserves in the form of insoluble albuminates and is only slightly assimilable. For twenty-eight years the custom of greening has been followed, and there is no recorded accident.

"Many foods, notably chocolate, contain copper in larger quantities than greened preserves.

"The existence of lead in the tinning and solder of the cans is a much more serious danger, coming, as it does, into contact with the liquid contents.

"Since copper exists in the animal and in many useful foods, sometimes in larger quantity than in greened preserves; since an experience of twenty-eight years furnishes no example of accident, and influenced by the interests of the canning industry, it is resolved that there is no reason for interdicting the process of copper greening so long as an established limit is observed."

After a discussion between Drs. Ranse, Gautier, and Galippe the society unanimously adopted the report.

The most ardent partisan of the absolute innocuousness of copper and its salts was Dr. L. M. V. Galippe, whose extended researches it cannot be denied have shed much light on the toxic nature of copper, as well as furnished most powerful arguments for the interested canners.

In 1875 he published in book form a study of the physiological action of copper salts. He concluded, from experiments upon dogs, that, apart from the temporary emetic, etc., effect of large doses, these salts were not poisonous.

In 1878 appeared his paper on the use of copper vessels in cookery, in which he endeavored to show that no harm was to be apprehended from such use. His statements may be summed up as follows:

"The object of this paper is not to show that cookery performed in copper vessels is superior to any other, but that it is devoid of the dangers usually attributed to it. The prejudice against this metal has gone so far in the past that in Sweden, under Queen Christina, a statue was erected to Prof. Schoffer, who had been largely instrumental in securing a prohibition of the culinary use of copper pots and pans.

"For fourteen months I had all the food of my family cooked in copper vessels, and my diet was as varied as possible. No trouble was experienced by anyone, women, children, or visitors. If, however, there was no trouble there were certain inconveniences. Food, especially fatty articles, thus cooked rapidly turns green. This inconvenience, however, is purely optical. Certain other foods, particularly peas and beans, resting long periods in contact with copper, often absorb enough of the metal to give them a feeble metallic taste, capable of offending a delicate palate. Dr. T. M. Jenkins, United States Commissioner to the exposition (Paris), was of the opinion that the glycerophosphoric acid contained in the yelk of an egg, was capable of forming a poisonous compound with copper. I therefore mixed milk and eggs in a copper pan and heated and stirred till the mixture was of the consistence of cream, and then allowed it to stand twenty-five hours. At the end of this time that part in contact with the pan was green from the action of the air and sour milk on the metal. The general appearance of the mixture was by no means agreeable and its taste very far from being so. Nevertheless it was eaten and with no bad results.

"By legal enactment the tin for plating culinary vessels and the like is allowed to contain 5 per cent of lead. From such an alloy food when hot, especially if containing much salt, dissolves lead. Tin also goes into solution. Personally I prefer salts of copper to those of either tin or lead, and therefore prefer copper cooking utensils."

[To be continued.]

FOR NERVOUSNESS

Use Horsford's Acid Phosphate. Dr. W. S. Hanscome, Minneapolis, Minn., says: "I used it in a case of acute rheumatism, during convalescence; the particular symptoms I wished to relieve were sleeplessness and nervousness, and the results were all I desired."

AMERICAN ANALYST.

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IMPURE GOODS.

The assertion has been frequently made that all the talk about adulterated and impure goods is exaggerated and that there is no ground for believing that manufacturers adulterate their goods. This is certainly not so, as the following extracts clipped from several of our exchanges will abundantly show that the grocery trade papers know that food products are adulterated. We abstract them indiscriminately:

A great many people are taking advantage of the hard times to push cheap food products. All the old stock canned goods that can be raked up in various parts of the country, all the stale, cheaply made cakes and crackers, all the cheap meats and food products of every kind that can be got together are being advertised and sold as wonderful bargains in the food line. And the people who sell them pose as benefactors of the poor.

Such goods are not cheap if they are given away. They are impure and often actually injurious to health. Take crackers and cakes, for instance. They cannot be made cheap and at the same time be good. The materials of which they are made must be pure and of the very best quality if they are to be classed among health foods.

They can only be made cheap by using cheap flour, cheap butter, cheap eggs, cheap flavoring extracts, and cheap labor. When they are made in this way they are not health foods, but on the contrary are often actually injurious to health. The same can be said of canned goods and in fact of everything in the food line.

Grocers never gain anything by selling cheap food products of this kind. They may sell a big lot of goods for a short time, but the people soon learn of the fraud that is being practiced on them and go where they can get pure food. Nobody wants stale, unwholesome food, and the grocer who gains a reputation for selling only that which is absolutely pure, even though he does charge a little more for it, is the one who will get the trade.

Recent developments in this town have given more interest than has heretofore been the case to the question of food substitutes in all its variuos phases We use the word "substitutes" generically, to cover not only the article that is literally a substitute, but also those articles that are imitations. It ought to be borne in mind, however, that there is a great difference between the imitation and the substitute. To more clearly illustrate this point, let us take the matter of table oil. Our daddies, living in humble style, with no such markets attainable as it is our fortune to enjoy, knew of table oil only as a luxury that they sometimes heard of, but seldom, if ever, saw. They used ham gravy, perhaps, or some other similar article on their lettuce. Clearly, this was a substitute. And they tell us it was a pretty good one. In the same way our German friends propose to express an oil which shall take the place of olive oil that involves so much expense and difficulty to manufacture. In one sense this will be an imitation, but in another it is a substitute, just as many things that are being put on the market from time to time is a substitute. We have never quite sympathized with those who have raised a hue and cry about substitutes. Some of the most popular foods in the markets to day were substitutes when first introduced; they took the place of something already in use. To condemn substitutes wholesale is as much as to oppose the introduction of any new article.

The country is flooded just now with cheap food products, especially in the line of crackers and cakes and certain kinds of groceries.

Now any good thing that is cheap is a blessing this year, but the trouble with cheap food products is that they are not good. Crackers, for instance, cannot be made out of pure, healthful materials and sold at the prices quoted by some local dealers. Crackers, when properly made, are a perfect health food, something that should be on the family table all the time, but crackers cannot be properly made and sold cheap, for the simple reason that the materials of which pure, healthful crackers are made and the labor reqired to make them cannot be bought cheap.

It's the same way with canned goods. Whenever prices get down below a reasonable point we know that quality is being sacrificed and if we care anything for our health we fight shy of the dealer who tries to catch us with moldy corn of this sort. When we hear of a butcher selling meat for about the price of good meat on the hoof we are suspicious that he has been out about the stockyards buying up diseased or injured cattle; when we hear of a hawker hawking his wares about at very low prices we cannot help thinking of cheap flour, ancient eggs and butter strong enough to walk. If we are thinking people we don't want these cheap products. We don't want to be robbed, but the dealer who provides pure, wholesome goods, goods that are above suspicion and who charges a fair price for them is the one who is going to get our trade even though we have to curtail expenses in some other direction.—*Pa. Grocer.*

The St. Louis *Grocer and General Merchant* speaks very irreverently of the Minnesota law on imitations of butter. It says the law here is "the acme of stupidity and injustice, and is the legitimate offspring of an unholy alliance between demagogery and cupidity." Well, there are, we suppose, two sides to most questions, and the anti-butterine people declare it is true in this case. There is one thing about the law, however, that makes a man smile or roll according to his temperament, and that is the clause requiring that butterine should be colored pink, with the manifest intention of making the article more opprobrious. Of course, it is well known by dealers that there is very little butter that is not colored and that butter color is a standard article of merchandise (see our quotation of prices). But, it seems, the consumers do not know that butter is made yellow by an artificial process, and so while they would not have anything to do with pink butterine, they will buy the yellowest of yellow butter and think the yellower it is the better it is. That clause was intended to be prohibitive, and it is so, or the manufacturers would have had this market stocked with pink oleomargarine long before this time.

Out in Minnesota, among their other unique and interesting laws is one providing that all the oleomargarine sold in that State must be colored a certain shade of pink.

In spite of this decree of the Wild Western law makers a big Western firm has been shipping into Minneapolis large quanties of oleomargarine in its natural color and selling it openly in defiance of the law. The State Dairy Commissioner brought suit against the firm and the latter has appealed to the United States Supreme Courts for an injunction against the interference of the Commissioner on the ground that the law is in direct violation to the constitution and that it also conflicts with the inter-State commerce law. The firm further declares that to color its products would be to make it injurious to health and lessen its value.

The point at issue is a very interesting one and the decision of the United States Courts will be awaited with a good deal of anxiety by the Minnesota dealers.

The ideas which Minnesota has in regard to its duties as the watch dog of the people's interests are unique and peculiar in the extreme. The law providing for the pink oleo was only one of the novel measures put through during the last season. Another was a law regulating the length of the dresses to worn by ballet dancers and still another that was introduced, but not passed, was a bill stipulating what kind of corsets women should wear—great legislation, all of it, worthy the blue law legislation of a couple of centuries ago, when it was a crime for a man to kiss his wife on Sunday.

If the Legislature has a right to say that all oleomargarine shall be colored pink, why not go further and decree that all substitutes for coffee shall be sky blue, imitations of oil a gorgeous purple and lard substitutes crimson. Think of the delightful combination they would make when ready for the table. A paint shop would be a circumstance. Every man's dinner would look like a rainbow boiled down and the corner grocery like the World's Fair exhibit of a dye factory.

ADULTERATION.

STRAINED HONEY ADULTERATION.

EFFORTS TO HAVE THE STATE LAW ON THE SUBJECT MORE VIGOROUSLY ENFORCED.

Efforts are now being made in California to have a State law enacted there against the adulteration of strained honey. Such a law was passed by the New York State Legislature about two years ago, but it is practically a dead letter, as no provision was made for the prosecution of offending parties, though within the past three months more strenuous efforts have been made to have the statute enforced. Massachusetts has a very strict law on the subject which is vigorously enforced, and so has Ohio, in which latter State there have recently been a number of convictions.

Honey is adulterated to a considerable extent in this State, but the practice is not so extensive this season as it was last, owing to the much lower cost of the pure article this year and the prospect of a very much larger crop. The cultivation of bees has spread very rapidly in California and throughout Arizona and New Mexico, and the provision of the Wilson tariff bill, removing a duty of 20 per cent from foreign honey. will, if the bill is passed, be the cause of much more honey coming here from the West Indies. Hence merchants look for a large supply of the pure article. Still, as the wholesale price of pure honey to-day is 5 a 6c per pound, and that of a good grade of glucose, the most common adulterant, is only 1¼c per pound, there is a margin of profit left for adulterated goods.

Some dealers claim that they find it necessary to adulterate honey to a certain extent, as during cold weather pure honey candies and grows very thick, which fact the majority of consumers erroneously think is an evidence of its impurity.

The principal New York grocery houses do supply perfectly pure honey to their trade with printed labels on the packages warning customers of the candying tendency, and instructing them how to remedy it.

Opinion differs as to whether honey adulterated with glucose is injurious to health or not. In the manufacture of glucose sulphuric acid is used, but in such a manner as to leave no injurious effects, although if the process of manufacturing is conducted carelessly it is possible for the glucose to retain traces of the acid.

At present most of the honey coming from California arrives here pure, and if adulterated, it is adulterated here. Buyers are very critical in their inspection of samples at present, as several large California shippers are reported to be sending their goods forward in second-hand oil cans, which give a disagreeable taste of oil to the honey.

ADULTERATED TAPIOCA.

A few lines may be written concerning the adulteration of tapioca. Starches of very low commercial value and very high irritating value are used as adulterants.

Sago, rice and potato starch are all used as adulterants, due to their being cheaper in price.

There is an analysis on record where a sample of pearl tapioca (?) consisted of potato starch entirely. It is to be hoped that the physicial regeneration of man will also bring about his moral regeneration.

ENGLISH COFFEE AND CHICORY PROSECUTION.

At Buntingford Petty Sessions, on December 8. George Moule, grocer, Cottered, pleaded guilty to selling coffee at Cottered, on November 10, not of the nature, substance, and quality demanded, and such coffee being found on examination by the Public Analyst to be adulterated with 50 per cent chicory. He was fined 12s. 6d., including costs.

LARD SUBSTITUTES.

Lard substitutes have become a necessity by virtue of that law in life that fixes nearly every earthly thing—supply and demand. The supply of lard is no longer what it ought to be, either in quality or quantity; and improved knowledge and taste demands something better than lard for many purpopes, where formerly it was the only thing used. A great deal of lard has had the oil taken out of it, and sold for illuminating purposes, to railroads, etc., and the lard that is left is the hard, white stuff that you sometimes see in the shop windows, in nice dry (not greasy) vessels lying on their sides, the lard surface bedecked with scalloped paper, and cranberry figures, and it hardly melts even when the sun shines on it! When do you think it will melt in your stomach? Good lard will run or melt on a pleasantly warm day. This trick of taking the oil out of lard is limited to some manufacturers. The farmers can't do it; their business is not extensive enough. There are large quantities of first class lard constantly turned out by the manufacturers, but it behooves the consumer to see to it that he gets it. There is also a way of adding large quantities of water to lard. The cook knows when she gets this sort: it spatters all over the stove when used in frying. On the other hand, when lard is used in making pastry, it leaves a peculiar taste of its own that people of nowadays don't like (though probably their grandmothers fed them on it, three times a day in their young days), and so, altogether, there is a demand for something more reliable, and something better than lard. Cotton-seed oil comes the nearest to supplying this demand. But for many reasons it has been found advisable to mix with the oil some animal fat substance, usually derived from beef fat. Such combinations are both healthful and economical, and are now being largely used in place of lard. (Why don't the farmers squeal about this hurting their business and appeal to the Legislatures, Congress, etc.? There would be about as much wisdom in it as there was in the oleo bellow.) The names of these lard substitutes indicate that there is no secret about the bulk of their ingredients. Take, for instance, Swift's Cotosuet, now a well established product on the market. It is healthful, cheap and easily digested, as fats go. Such substitutes are better than lard for those people who are peculiarly sensitive to lard in their digestive apparatus. Some of these days our California and Southern friends will provide olive oil cheap enough for some cooking purposes. But this is one of the pleasures in store for our future generations to make up for the weak digestions we shall entail to them.—*Household News.*

IS ADULTERATION A FRAUD?

We have emphasized the fact that nearly all adulterations are substantially harmless as to health; that adulteration of any sort is a fraud that ought to be punishable, there is no question. At the same time, even here there is question whether our laws are not tending to an extreme; whether in the multiplicity of them and the elaboration of machinery to enforce them, legislators are not listening too much to the hue and cry of would-be reformers and not quite enough to the dictates of common horse sense. The recent reports of the Massachusetts Board of Health shows that the total expense of collection, examination of food samples, and prosectuion was \$10,454 for 1893, and the amount of revenue from fines was only \$2,475. And the prosecutions, it must be remembered, were for adulterations of drugs as well as for foods; and, moreover, the prosecutions were not for harmful adulterations alone, but for any sort of adulteration. If one could differentiate these cases so as to enumerate the number of cases prosecuted for positively injurious adulterations, we guess the cost to the state would have been out of all proportion to the amount of revenue received from prosecutions for such injurious adulterations. "Out of all proportion?" The receipts as they stand are out of all proportion to the expense; less than one-quarter. We are as strongly opposed to frauds in food as any paper in the country, but we opine there will come a reaction from the present tendency to over zealous guardianship of the people; we legislate too much.

HE SHOULD PROSECUTE THE FARMER.

At Bristol police court, on December 20, John Cannings was summoned for, on November 28, selling new milk which was not of the nature, substance and quality required by the Foods and Drugs Act. Mr. R. A. Moger prosecuted on behalf of the Urban Sanitary Authority, and Mr. H. C. Moore defended. Mr H C. Montague, inspector under the Act, said he had visited the defendant's premises on November 28, and was supplied with a pint of milk by the defendant's wife. The milk was divided into three parts, one of which was kept by the defendant, one was sent to the City Analyst, and one kept by himself. He had received a certificate from Mr. Gatehouse which showed that 10 per cent of water had been added. Mr. Moore admitted that his client had been guilty of a technical offence, of which he was in no way responsible. About a year ago he entered the business and was supplied with milk by agreement with a Mr. Perret, who had, however, he alleged, misled him as to the quality of the milk. He hoped the Bench would take this into consideration on arriving at a decision. The defendant and his wife were called, and denied that the milk was tampered with after they received it. No other persons than themselves handled the milk. Alderman Bright said he had known the defendant for a number of years, and could give him but the best of characters. Alderman Sturges also said he had known the defendant for more than twenty years. He had always borne an irreproachable character; he was a most conscientious man. The Chairman said he himself could testify to the defendant's character. The Bench believed with him that he sold the milk as supplied to him, but they must protect the public. Though not morally guilty, legally he was, and they would only inflict the nominal penalty of 1s. and costs.—*Food and Sanitation.*

SPURIOUS CONDENSED MILK.

At the last meeting of the Bath sanitary committee, Mr. Montagu presented a certificate from Mr. Gatehouse of a sample of condensed milk labeled "Sweet separated milk preserved with the finest cane sugar." The analyst was of opinion that the same was a sample of condensed separated milk mixed with cane sugar, agreeing with the advertisement on the label. Such a milk mixed with sugar in the proportion above indicated was an extremely poor substitute for cow's milk when used to feed young children, who would almost starve on it. It was shown by the clerk that it would be useless to prosecute in a case like this, as the contents of the tin agreed with the representation on the label. Alderman Jolly thought if the matter were made public by the press, buyers would know what they were purchasing. The clerk (Mr. Moger) reported that he had written to Mr. Gatehouse in respect to the condensed milk reported as analyzed by him at the last meeting of that committee, and had received the following reply:

"36 Broad street, November 21, 1893.

"Dear Mr. Moger: As the composition of the two condensed milks, numbered two and five, corresponded substantially with the advertisement on the label around the tin, I should presume that it would be useless to originate a prosecution, although the amount of sugar was so high as to seriously impair their efficacy as a nutritious food. The public certainly ought to know what they are buying when they purchase these so-called condensed milks, as they are by no means equal to natural milk in any way, and especially if diluted with water to the extent recommended on the label. I conceive, however, that a discussion on the matter in committee, together with the publication of the results of my analyses, would be preferable to a prosecution, which would almost certainly fail to ensure a conviction, besides entailing a certain amount of hardship on the retail seller. Yours truly,

"J. W. GATEHOUSE."

FRAUDS IN DRESDEN AND SEVRES.

As to porcelain, it is probable that more than half of the "old" Dresden china now exposed for sale is counterfeit. Most frequently the originals have been copied, mark and all, but in some cases really old Dresden china that was originally white has been painted by an ambitious forger. With Sevres china, the more common ware has sometimes had the whole of the original pattern and glaze removed and received a new ground of turquoise or some of the royal colors, to which painting or medallions in the old style have been added.

In 1816 a dejeuner service, with portraits of Louis XIV. and the principal ladies of his court, was offered to Louis XVIII. as having belonged to his grandfather, Louis XV., but on examination it was found that the principal plateau was of a design not introduced in Sevres until fifteen years after the death of the reputed owner of the service. Instead of adorning the table of the king, the service was relegated to the museum at Sevres as an interesting forgery. Spurious Palissy ware is almost a drug on the market, and nearly every porcelain manufactory is now represented by pieces either wholly reproductions of its genuine products or having their marks and character in some way modified. There is no one who should more dilligently apply to himself the motto, "Caveat emptor!" than the collector of pottery and porcelains.—*Longman's Magazine.*

HYGIENIC.

BAD FOR THE EYES.

Among the sources of the greatest trouble to the eyesight are the chewing of tobacco (this above almost all others), the excessive use of wine, spirits or beer; the indiscriminate administration of quinin; the use of cosmetics for heightening the lustre of the eye, and mixtures for dyeing the hair and eyebrows, and there is a case on record where a diminution of vision has been traced to the wearing of an artificial wreath of flowers. Another source of failing vision may be traced to impeded circulation. The wearing of tight neckwear, such as collars which are too small, or shirt bands or neckties tightly drawn, should be avoided, as they prevent the downward column of blood returning to the heart, and dilatation and development of disease is likely to follow. The same rule holds good of constriction of other parts of the body. Another most serious source of eye strain is constant reading in railroad carriages, which is the practice of nearly all business men in going to and from their offices and stores, and the injury to the eye from this cause is incalculable. Nothing gives tired eyes greater relief than a green disk or square of sufficient size, suspended on a direct line of vision at or against a wall, on which the eyes can rest; but best of all to look upon is a green grass plot or green trees. The green cloth of the poker table is not good for the eyes at all. It is suggested that it would be a public boon if our monthly magazines were printed on paper of neutral tint, and the drop-curtains in theaters should have scenes painted on them showing great perspective. It is a rest to the eyes, after the concentrated effort made in trying to watch the facial expression or eyes of an actor, to look upon such a picture.

ALL-WOOL UNDERWEAR.

"When you go out in the sun, wear all-wool garments; if you go in the rain, do likewise; and when you stay in the house, there is no need to change the material. All-wool clothing is quite good enough for the sons and daughters of men at any time of the day or year. It is cool in summer, warm in winter, comfortable and adaptable for demi-season wear, and healthful, sanitary, and generally comforting, at all times and for all occasions. The fabric may be heavy or light, thick or thin, according to fancy; but let it be wool first, last, and all of the time."

This advice, says the New York *Ledger*, given by an experienced physician, agrees perfectly with the observations of many persons who have in their own cases tried the effect of wearing garments of all sorts of material. Many of them have found silk too cold, linen too absorbent, and cotton too close-woven to be agreeable to a sensitive surface.

It seems to be an accepted fact that cotton is the least desirable of all materials, and wool the very best. But it must be fine wool, and free from admixture of vegetable fibre. Silk is the best material to mix with wool, if mixtures are required. But the consensus of the medical profession is directly in favor of wool.

It seems a curious fact that one material can be made so desirable as an all-the-year-round fabric, but so it is, and as wool and kindred substances, and not cotton, are the clothing of almost the entire animal creation, it might be supposed to stand to reason that the Creator of all things knew just exactly what He was about when He so provided for the comfort of the works of His hands.

Wool is one of the non-conductors, and therefore extracts less of the animal heat from the body, and keeps the temperature much more uniform. Physicians, as a rule, agree that all infants, young children, and delicate persons, as well as those advanced in years, should wear all-wool flannel; and that men and women in the fullness of health and strength ought never to wear any other material than all-wool as undergarments.

MEDICAL.

THE DANGERS OF SALICYLIC ACID.

The *Schweizerische Wochenscrift fur Pharmacie* has the following concerning the dangers attending the external use of salicylic acid:

One of our friends, a country practitioner, was suffering recently from sciatica, and conceived the idea of experimenting upon himself with an alcoholic solution of salicylic acid, which he had seen recommended as a topical application in rheumatism. He applied compressed web with the solution and renewed them several times during the evening. As he started to get to bed he was seized with a feeling of malaise, which was accompanied by intense itching over the body, ringing in the ears, and finally the body began to swell. He lost consciousness, and his servants and others around him thought him dead. A colleague, called in great haste, found the body enormously inflated (the skin seemed as though it had blown full of air), and the patient was in a state of complete coma. He had absorbed by the skin an enormous dose of salicylic acid. After the use of various revulsives and active evacuants, consciousness returned to the patient, and the swelling gradually disappeared. It was several days, however, before he was able to resume his daily avocations.

Pomades containing salicylic acid are also not free from serious inconveniences, not to say dangers, as we have had occasion to find out in several instances. In a number of cases the first application of salicylated pomade produced such discomfort, swelling and inflammation that the patients could not be induced to continue the use of the medicament. The lesson to be learned from these cases by pharmacists is never to dispense salicylated ointments, solutions, etc., without the prescription of a physician.

HOW CORNS GROW.

Even in things so slight as corns we may find ample illustration of the law of cause and effect upon which disease is dependent.

The first change consequent upon an irritation of the surface of the foot is a perceptible increase in the amount of blood supplied to the part. This, since there is no rupture of the surface, results in undue activity of the tissue changes of the epidermis, and we have a thickening of the superficial part of the skin.

It is obvious that this only aggravates the difficulty, inasmuch as the dander of irritation is greater in a raised condition of the skin than when the surface is flat.

It is now that the painful period in the growth of a corn begins. The deeper layers of the skin in their turn undergo precisely the same operation of excessive activity, and the consequent thickness of the tissue.

As corns usually make their appearance over joints, no cushion is afforded by soft tissues beneath them, on which the swelling may rest. On the contrary, the deeper and sensitive portion of the corn is caught and squeezed, as it were, between two hard plates, the thickened epidermis on the one side, and the surface of the bone on the other. The increased activity continues, however, and with it the pain and discomfort is established, which is significant of the fully-developed corn.

The appearance of a corn when a vertical section of it is made shows us,as might be expected, the button-shaped callus resting extensively upon the concave surface of the deeper growth, which it has hollowed out by its own pressure. This constitutes the 'core' of a corn.

The treatment of corns may be gathered from what we have learned as to their growth, and consists solely in keeping the callus soft and restricting the activity of the tissue-changes.

It is obvious that the irritation necessary to the origin of a corn may be brought about by a shoe which is too loose, as well as by one that is too tight. We get friction in the first case, and pressure in the second.—*Ex.*

CARE OF THE TEETH.

Much of the dyspepsia and indigestion of all ages is due, not so much to any fault of the stomach, as to incomplete mastication from the teeth.

The teeth have never properly been appreciated by a certain class of people; and the dentist is looked on either as simply a luxury, or as "a man who pulls teeth."

There is one piece of advice which should be impressed upon all minds,—it is, never to have a tooth removed unless assured by a good dentist that nothing can be done to save it, and that it should be pulled out. Many teeth are sacrificed because it is cheaper to have them out at once, and pay a small sum, than to endure the pain of a filling, and incur a large expense.

The front teeth are intended principally for taking hold of the food, while the back, or jaw teeth, as they are called, are for grinding the food, and so mixing it with the juice of the mouth that it may be prepared for the stomach. Many a grinder that is only partly diseased could be scraped or filled and still do its duty; while if it be removed, it leaves a blank space, and renders the corresponding tooth in the opposite jaw useless, because it has nothing to bite against.

False teeth are now made with a great degree of perfection; but the most beautiful artificial teeth can never equal those which nature has given us. Therefore, always take advice before having a tooth removed, and never go to a dentist with the request that a tooth be pulled out; but let each tooth be considered precious.

The dentist should be visited twice a year, even though there be no toothache; he will often be able to detect a beginning decay, which may be arrested, and the tooth saved.

DANGERS OF EATING FRESH BREAD.

M. Boussingault has made a fresh loaf of bread the subject of minute investigation, and the results are interesting:

New bread, in its smallest parts, is so soft, clammy, flexible, and glutinous, that by mastication it is with great difficulty separated and reduced to smaller parts, and is less under the influence of the saliva and gastric juices. It consequently forms itself into hard balls by careless and hasty mastication and deglutition, becomes coated over with saliva and slime, and in this state enters the stomach.

The gastric juice being unable to penetrate such hard masses, and being scarcely able even to act upon the surface of them, they frequently remain in the stomach unchanged, and, like foreign bodies, irritate and incommode it, inducing every species of suffering,—oppression of the stomach, pain in the chest, disturbed circulation of the blood, congestion and pain in the head, irritation of the brain, and inflammation, apoplectic attacks, cramp and delirium.

DETECTION OF CHOLERA BACILLI.

BY R. KOCH.

The process, according to the author, if suitably applied, indicates even a single cholera microbe in drinking water and river water. The method requires that, while observing the well known precautions, a little of the suspected water is added to a solution of peptone and allowed to stand at 37 deg. If there are in the material only very few cholera bacilli capable of development, they increase very remarkably at the above temperature in from six to twelve hours. In consequence of their avidity for oxygen, they collect upon the surface of the liquid, where, under certain circumstances, they form a fine film, distinctly visible. On the miscroscopic examination of a drop of the liquid from the surface, the characteristic "comma bacilli" are seen in prodigious numbers.

In order to be quite certain in the diagnosis, we take a drop from the surface of the liquid containing the bacilli and make up gelatin—or, preferably, agar—plate according to the old method. If the gelatin plates are allowed to remain at 22 deg. (or the agar plates at 37 deg.), in from ten to fifteen hours the cholera bacilli (if present) will have grown to characteristic colonies, so that in the most difficult case a demonstration can be secured within about from twenty-one to twenty-seven hours.—*Zeit. fur Hygiene* and *Zeit. Anal. Chemie; Chem. News.*

"You must let the baby have one cow's milk to drink every day," said the doctor.

"Very well, if you say so, doctor," said the perplexed young mother; "but I really don't see how he is going to hold it all."

TO CUT SHORT WHOOPING COUGH IN TWENTY-FOUR HOURS.

The *Illustrated Medical Journal* says that Dr. Moncorro treats pertussis with a 10 per cent solution of resorcin by applying the solution every two hours to the periglotteal region with a throat brush. The application is made four or five times at each seance. The theory of the treatment is that the disease is due to a micro-organism and affects primarily the larynx. Cultures of the micro-organisms have been destroyed by the smallest amount of resorcin.

GETTING PRACTICE.

"Why, Doctor, I think you must be insane!" said Harry to a well known M. D., who was busy planting apple trees right against his front fence. "Why, the small boys will steal the fruit before it has a chance to ripen."

"That's just exactly what I want," replied the M. D. "Green apples means the colic, and colic means the doctor. See?"

LAMENT OF THE MICROBE.

Great changes have swept o'er every clime,
Since earth first swung into her cycle of time.
Huge monsters that roved our valleys and plains
Are now only traced by their fossil remains.
Genera and species have gone by the board.
That's left scarce a vestige for man to record.
And now Science comes with her glasses to see
Great things hath been done by the small microbe.

For ages and ages we've had our own way,
Our march was triumphant, and naught could us stay.
Both London and Paris have bent to our power;
And Mecca's still with us to this very hour.
Last year we tried New York, but it was no good:
For Wilson watched clothing, and Lassing watched food.
Next Russia we sought, where conditions were free;
But there winter's too cold for the microbe.

There's Seacord, the dentist, I'll tell you forsooth,
He won't let us dwell in the cave of a tooth.
And Edison, too, ere he stops I do fear;
Will invent some machine. our converse to hear.
With such odds against us, I've scanned all the stars,
And think we best skip to the planet of Mars.
For Science and Art very soon, I can see,
Will make earth too hot for the wee microbe.

D. WATSON.

THERAPEUTICS OF SYRUP OF FIGS.

The medical profession should understand at once the composition of the "Fig Syrup," so extensively advertised in the leading medical journals of this country. Its laxative properties are obtained from the well-known drug, senna. The company make no secret of this, but simply claim they have succeeded in obtaining the active principle from the senna in such a manner that it can be so combined with other agents as to give a pleasant mixture. The natural taste of senna is both nauseous and bitter, decidedly disagreeable in odor and taste. To overcome these objections the drug has been prepared in a number of ways. But in the form of the Fig Syrup it is a most palatable preparation to which the youngest child or most fastidious lady could not object.

Bartholow says that senna "is highly prized" by many patients as a remedy for habitual constipation. He also states that it does not cause inflammation or hypercatharsis and its purgative action is not followed by intestinal torpor and constipation. He further adds that "it is a very safe and serviceable cathartic."

In this connection it is well to observe, for it is a matter of no small importance to the public, that the highest courts in the land have decided the validity of trade marks, trade names, or trade words, for it is the safest protection against the selling of worthless imitations and base frauds. For instance, a company places a most eligible preparation on the market and presents it to the public at a great outlay before the least profit is derived. Then unscrupulous imitators place worthless combinations on sale and derive at once their share of the large sales which the energy and capital of the originators ensured. Soon, however, these worthless samples injure the sales, and a preparation which was originally a very desirable combination becomes known as uncertain and disappointing. Now a trade mark or trade word is a protection to the public from these evil designers. Take the recent case of the California Fig Syrup Company. The U. S. Court of Appeals, which is the court of highest resort in such cases, rendered a decision on January 30 last that this company had acquired a reputation from the excellence of this medicine under the name of "Fig Syrup" or "Syrup of Figs," and they only had the right to use this name in connection with a laxative remedy.

HOUSEHOLD.

TESTED RECEIPTS.

Every receipt here given is original, has been practically tested by the AMERICAN ANALYST and is therefore confidently recommended.

ROAST QUAILS.

Clean six plump quails and wash out very carefully with cold water, in which a little soda has been dissolved. Cleanse finally with pure water, and wipe dry inside and out. Place within the body of each bird a couple of oysters, or one very large one; sew it up and range all side by side in a baking pan. Pour a very little boiling water over them to harden the outer skin and keep in the juices, and roast, covered about half an hour. Then uncover and baste frequently with butter while they are browning. Serve upon rounds of fried bread, laid upon a hot dish. Put a spoonful of gravy on each, and put the rest in a boat, when you have thickened and strained it. If liked a glass of claret may be added to the gravy after the quails have been taken up.

PRESSED CHICKEN.

Cut up as for fricassee and boil three or four hours, or until the bones can be easily taken out. Keep water enough to cover, and season with salt, pepper and thyme while cooking. When done remove all skin, fat and bone. Strain through a colander, saving the water the chicken has been boiled in. Place the longer pieces of dark and white meat in the bottom of the pan; scatter a few very fine bread crumbs and place slices of two boiled eggs between the layers of chicken. Pour all the liquor over, and let it stand in a deep dish until thoroughly cold. Then turn on a platter to serve. It should always be made the day before it is needed.

SCALLOPED OYSTERS.

Large, fine shell oysters. Open the shells, setting aside the deepest ones. Have ready some melted butter, not hot, seasoned with minced parsley and pepper. Roll each oyster in this, and lay in the shells, which should be arranged in a baking pan. Add to each a little lemon juice, sift bread crumbs over it, and bake in a quick oven until of a delicate brown. Serve in the shells.

RICE CROQUETTES.

Work two tablespoonfuls melted butter into two cups of cold-boiled rice, then a pinch of grated lemon peel, a little nutmeg, two tablespoonfuls powdered sugar, a tablespoonful flour, lastly, two eggs well beaten. Make into tiny balls, roll in egg, then in powdered cracker, and fry in boiling hot lard.

CRUMPETS.

Melt one small tablespoonful lard, add to it one egg and one-half gill of milk. Beat well, then add one-half teaspoonful salt, one teaspoonful sugar, one and one-half teaspoonfuls baking powder sifted with two and one-half gills of flour. Bake in muffin rings in a very hot oven at once for five minutes. This quantity makes six crumpets.

MUFFINS.

Three eggs, yelks and whites beaten separately, one pint of milk, one tablespoonful melted butter, two teaspoonfuls baking powder, flour enough to stiffen.

COFFEE—TEA -CHOCOLATE.

A *causerie* of Dr. Joseph de Pietra-Santa in the *Journal d'Hygiene*, apropos of what is said in Alfred Franklin's book, *La Vie Privee d'Autrefois*, on the subject of the use of coffee, tea and chocolate in the earlier days of their introduction into Europe. Translated for the *National Druggist*.

The use of coffee was not introduced into Paris without difficulties. It was not one of those sudden, fashionable fads of which the history of our customs furnishes us so many examples.

About the year 1660 some Armenians, or parties calling themselves such, brought some packages of coffee from the south to Paris and for awhile tried to get people to use it, but they could not overcome the indifference of the public. Indeed, very few Parisians of that day even suspected the existence of kave, as it was then spelled, and those who had heard mention of it took very little stock in it, as is proven by some very bad verses on it, written and published by the advocate, Subligny(*La Muse de Cour*, December 2, 1666). One of them runs thus:

> Its virtues unequalled, this Arabian balm,
> (Everyone knows it or thinks it),
> And specially for women, it works like a charm,
> When the husband it is who drinks it!

Our fathers did not take kindly to coffee as a beverage, and an extraordinary event, one susceptible to striking their imagination, was necessary to make it the fashion. This came in 1669, when Mohamed IV. sent an envoy extraordinary to Louis XIV. in the person of Soliman Aga Mustapha Raca, who, previous to this diplomatic mission had been "Intendant of the Gardens of the Seraglio" (plainly head gardener of the harem). He was very hospitable and received in grand style, especially welcoming the ladies who called in troops: and, following the custom of his country, coffee was served to all visitors. Young and handsome slaves, dressed in rich costumes, presented the ladies with damask napkins, embroidered and fringed with gold, and coffee served in cups of the finest porcelain, imported from Japan. The liquid at first appeared detestable, and it was rarely swallowed without grimaces. All at once it became the rage, as by enchantment, the enchanter being the Embassador, to whom it occurred to sweeten the beverage with a lump of sugar.

Everybody who had the honor of having been received by Soliman, now in turn offered coffee to his or her guest, and thus it was that coffee became fashionable. From high society it soon spread to commoner folk, though only the richest of those could afford to purchase the precious berry, the price of which was, in our money, 80 francs (about $15) a pound.

[The translator has memoranda and bills of 1863-64, showing the price of coffee in Mobile, Ala., to have ranged from $25 to $250 (in Confederate money) the pound. The money at that time ranged from $20 to $30 for $1 in gold, so that the actual gold value of coffee was from $1.25 to $10 the pound.]

It was on sale only in Marseilles at first, and even there, the merchants, not having foreseen its sudden popularity, had but little in stock. The Levant, Smyrna and Egypt had lots of it and were eager to sell, so that in a very little time coffee was within the reach of all. Except, however, in the larger cities there was not much demand for it. Its use reached the provinces about 1670.

As for coffee houses, shops for its sale as a beverage, in spite of Paschal's effort to introduce it at the St. Germain Fair, they did not make their appearance until 1680. These were not much visited, or were rather shunned by good society. They were usually dirty, dark little holes, where the frequenters smoked, drank beer and sipped adulterated coffee.

The honor of having changed all this belongs to a gentleman of Palermo, Francesco Procopio dei Cotelli by name, who bought a suitable place and had it fitted up in the greatest luxury. Here astonished Parisians saw for the first time a shop fitted up with costly and elegant carpets and rugs, great mirrors, crystal chandeliers, and marble tables, on which they could be served not merely with excellent coffee, but with tea, chocolate, ices, liquors of all kinds, biscuits, confitures, etc. The innovation instantly became the fashion, and from it we may date the reign of the cafe in Paris.

The use of coffee soon became universal, and even a tyrannical habitude, a passion sufficiently strong to resist all criticism, and even persecution, for the berry had its strong opponents, even veritable enemies. Among these were the physicians, who denounced it roundly, prophesying all manner of diseases, which they declared would follow the use of so dangerous a beverage. (This kind of doctors are not all dead yet, though not very numerous. Liebig, the great chemist, was a great lover of coffee, drinking it at every meal in preference to the finest wines (which were always on his table—presents from crowned heads and the great vintners of the world). One day a physician said to Liebig, in the hearing of the writer, that he (Liebig) consumed too much coffee. "Coffee," said he, "is a slow poison." "Yes," retorted Liebig, "an exceedingly slow one. I have been drinking quantities of it for fifty years, and it has not poisoned me yet."—F. L. J.) According to some of these gentry, coffee taken fasting acted most injuriously on the stomach (*causait des ravages dans l'estomac*—literally, "caused ravages in the stomach"), and as proof of the fact they cited a proverb, which they ascribed to the great coffee drinkers of the world, the Turks, and which says: "If you have nothing to eat with your coffee, swallow a button from your vest, or do not drink at all." Others being too politic to deprive their patients of what they loved, descanted upon the powerful nature of ground coffee, and advised their clientele to boil the whole berry, being careful to take off the husk, which was dangerously strong. Some followed this advice, drinking a sort of tisane of coffee, which was dignified by the name of "*cafe a la Sultane*." It must, however, be confessed that there were many physicians who regretted this ostracism of coffee by the profession, and it was one of these who counseled the use of cream with coffee and sugar. Under this form the doctors endorsed its use.

Cafe au lait, thus introduced as a medicine, has had a brilliant career. It was recommended in 1856, by Sieur Monin, a celebrated physician of Grenoble, who ordered it to be prepared as follows: "Take a cup of good milk and heat it. When it commences to boil throw into it a tablespoonful of ground coffee and a spoonful of *cassonade* (unrefined sugar), and let the whole boil a little time. After drinking this liquid it is necessary to fast for four hours. Used in this way the effects of coffee are inappreciable." We should hope so! Dr. Monin declared that *cafe au lait* "did not curdle in the stomach nor obstruct the bowels. It stopped coughing and fattened the patient." Good Dr. Monin! The Faculty of Medicine of Paris concurred in the advice, and have remained of this mind up to to-day.

A thesis, dated 1697, sounded the virtues and recommended the use of *cafe au lait*, but another, dated 1715, demonstrated that the constant use of coffee abridged life. It did not have much effect, for in the following year the Faculty, in open school, admitted that coffee favored *les traveaux de l'esprit*, or, as we would say to-day, is of benefit to brain workers. In March, 1718, a candidate, in a thesis, demonstrated that "the long habitual use of coffee in no way predisposed the user to apoplexy," from which we may infer that it did so predispose was one of the many charges against the priceless berry. At the same time we find Daniel Duncan, presumably a Scotchman, accusing coffee of being the cause of impotence in men and sterility in women.

The Parisian coffee guzzlers, however, did not bother their heads about these controversies, if we may believe the *Mercure Galant* concerning their favorite tipple:—

As they rail against woman,
So they rail at this brue;
They curse it and damn it,
But they drink of it too.

They rail at the ladies.
But love 'em the same;
With coffee and women, they
Embrace what they blame, etc.

TEA.

The use of tea as a beverage did not spread in Europe as rapidly as that of coffee did. It was only well toward the middle of the seventh century that it made its first appearance in Paris.

Commissioner Delamarre, in his "Traité de la Police." tells us that tea commenced to come into use in Paris in 1636, an assertion not backed up with proofs, it is true, but one that I am disposed to accept. I find tea, however, first mentioned in a letter from Paris, written by Guy Patin, dated March 22, 1648. It cost a pretty penny at that time, if we may believe Father Alexander, of Rhodes, who says: "The Hollanders carry *tay* (it is thus written in the original, from which I would infer that Pere Alexander de Rhodes, like the 'Wild Man of Borneo,' of the dime museum, came rather from Tipperary than from Rhodes. Concerning the price of the 'tay', of which he complains, I would say that $6 per pound (a *livre* was equivalent in value to about 20 cents of our money, and a *sol* was a twentieth part of a livre, and hence represented, as nearly as may be, 1 cent) would be considered very low even now for a really first class article of tea, such as Russians of the better class use to-day. The writer has paid as high as 20 roubles ($15.50) the pound for the best tea, which at that time was brought overland through Asia by caravan. A specimen of tea from Ceylon recently sold in London at auction at £8 the pound.—F. L. J] from China to Paris, and there sell for 30 livres the pound what cost them in that country 8 to 10 sols, and yet I notice that, for the most part, the *tay* is very old and musty."

Chancellor Seguier, about this time, accepted the dedication to him of a thesis upon the virtues, medicinal and otherwise, of tea. It is very probable that the influence of this high dignitary had a marked effect upon the faculty of medicine, since the latter, so hostile, as we have seen, to coffee, allowed itself to be easily persuaded in the case of tea.

In 1659 the learned Dr. Denis Jonquet did not hesitate to call tea the "divine herb," in which he "found all the delights of ambrosia." In 1685 Dr. Sylvester Dufour declared that tea "infallibly cured" a great number of maladies; that it was such a powerful diuretic that, taken in quantity, it would cause diabetes, in which there is, according to the doctor, "a mighty copious flux of urine, resembling the tea that one has drunk."

Society followed the surrender of the faculty, and in spite of its high price, tea was held in such honor in 1694, according to Apothecary Pomet, "there were very few people of quality and of well-to-do bourgeois who did not use it." Scarron commenced to use tea in 1659, and in 1680 Madame de Sabliere conceived the addition of milk to the brew. We learn that the Princess de Tarente, at this time, drank twelve cups of tea daily. She continued to use it, though only in the mornings, up to the time of her death. Daniel Huet, the learned bishop of Avranches, who died at the good old age of 91 years, was a passionate lover of tea. He declared that its delightful odor seemed at once to clear away the mists from his brain, and hence he called it his brain-broom (*le balai de l'esprit*). The Princess Palatine, on the contrary, would use neither tea nor coffee, reserving to the last her German passion for beer, and for *choux au sucre* (cabbage dressed with sugar).

CHOCOLATE.

First imported into Europe from Mexico by the Spanish Conqistadores, chocolate was long considered a medicine, and it was as such that it first made its way into France. It was at once accepted by the faculty of medicine, with whom it has ever been a favorite.

In 1684 the baccalaureate Foucault took for his thesis the subject, "*An chocolate usus salubris*"—Is the use of chocolate healthy? His work was a pæan, an enthusiastic eulogium on the Mexican bean. He declares, however, that if one uses it for the pleasure it gives, he must limit himself to two cups per diem. The bilious should prepare it with water of endives, and the constipated should add rhubarb to it. It should always be avoided during the dog-days. It is of great service to those whose stomachs have become enfeebled by colics, diarrhœa, borborigmi (meteorism) and too copious evacuations. It is so nourishing that no soup or meat bouillon can sustain life so long or so well.

Dr. Blegny recommends its use in "colds (rhumes) and fluxions of the chest, inflammations of the throat, insomnia, cholera morbus, diarrhœa and dysentery"; while in the eyes of Dr. Hecquet, Dean of the Faculty in 1712, "chocolate was scarcely to be considered as having the quality or title of a drink, but should be placed among the bouillons and consommés, so nourishing is it and full of juice, being itself capable of sustaining the life and strength of even the most robust." Nicholas Andry, a colleague of Hecquet, in 1713, states that "chocolate cures even phthisis, but," he adds, as a saving clause, "not as a rule."

In this concert of praiseful song there is, of course, here and there a discordant note, while chocolate even had its enemies and detractors. The celebrated English doctor, Lister, in 1698, declares it to be "a dangerous aperient, but at the same time a gross sort of food that might suit the stomach of an Indian"; and Dr. Duncan, in 1705, gave his condemnation to chocolate. Contrary to Sangrado, M. D., of facetious memory, Duncan prescribed only hot drinks.

The Princess Palatine, along with tea and coffee, abhorred chocolate, and accused it of all manner of dietetic and hygienic malfeasances, not to say felonies. In a letter dated November 10, 1716, she even declared that chocolate had spoiled the teeth of Queen Christine.

Between two evils, it is a good rule to choose the lesser one. The Parisians, who knew how to prepare chocolate in the most perfect manner, were always passionately fond of chocolate, and its praises were sung by everybody.

To Ærate Distilled Water.—Put the water in an ordinary garden watering can, provided with a rose, and raising it two or three feet from the water urn, pour it in. Repeat this several times, and it will be found to be pleasantly aerated. The watering can should be clean and dry, and not recently rinsed with ordinary tap-water, but well scalded with boiling water. China cans can be purchased, and would be the most suitable.

French Mustard.—Here is an improved recipe for this condiment: Take salt, 1¼ lbs.; scraped horse radish, 1 lb.; garlic 2 cloves, boiling vinegar, 2 gallons. Macerate in a covered vessel for twenty-four hours, strain, and add sufficient flour of mustard.

For Glazing Starched Collars, Shirt Fronts, Etc.—Huss has taken out a patent in Germany for the following process: Dissolve 16 grains of saltpeter and 24 grains borax in a gallon of water, and to the solution add a pint of pure glycerine. This liquid is applied to the linen after the latter has been dried (and, presumably, starched, although the specification doesn't say so) and polished. It may be simply sprinkled on or applied with a cloth dampened with it. The article is again polished with the iron, and the effect is said to be very brilliant.

A Wrinkle About Safety Matches.—One of the reasons why safety matches are not more in use is the propensity that the lighting composition, applied to the boxes, soon gets glazed so that it becomes very difficult, often even impossible to light a match on it. This difficulty is very easily remedied by rubbing the lighting surface with a stiff cloth, or, better still, by lightly applying a bit of fine sand paper to it, so as to remove the glazing. This latter seems to consist of a portion of the surface of the match point, which is rubbed off before the friction becomes sufficient to produce a light, and thus gradually puts a covering over the lighting material.

SHOE THROWING.

The delivery of a shoe was anciently used as a testimony in transferring possession. A man plucked off his shoe and gave it to his neighbor; this was a testimony in Israel. Throwing a shoe on property was a symbol of new ownership. Subsequently, throwing an old shoe after a bride symbolized that the parents gave up all dominion over their daughter. This was the origin of casting a shoe after a bride.

The hard times are driving some folks to smoking five-cent cigars. Really, people ought to be satisfied with one-cent cigars, provided the scent is tobacco.

INVENTIONS, SCIENCE, ETC.

PERFUMES AND THE SENSE OF SMELL.

The olfactory sense is followed by effects of different kinds of intensity from those of sight and hearing, and may be accompanied by a kind of poisoning. The old medical books are full of stories of it. There are those of a girl killed by the exhalation of violets; of a woman seized with a violent headache from sleeping on a bed of roses; and of a girl who lost her voice by smelling of a bouquet. Ancient medicine attributed curative properties to perfumes, particularly to those of the rose, musk, and benzoin. The intensity of the effects of perfumes makes a rapid succession of sensations almost impossible, for consecutive odors cause a rapid anæsthesia of the senses; on the other hand, if the times separating two successive sensations are too long, it becomes impossible to combine them, and the anticipated effect is disturbed by strange feelings. In short, smell is rather the complement of other excitations than an artistic excitation like a melody or a picture. Its function is, nevertheless, very important. By virtue of its volatility it is a valuable prophylactic; by the great intensity of its effects it can bring about salutary modifications of physiological functions, particularly of the amplitude of respiration, and it possesses in the highest degree the luxurious character of every artistic enjoyment. Flavor has an essential part in nutrition; so has touch. Hearing and sight are indispensable to relations with other persons; but smell, necessary to the animal for finding its prey and avoiding danger, has become, under normal conditions, an almost useless sense to man, since the refinements of civilization tend to prevent the production of miasms and the pestilential odors from which he has to protect himself. It is therefore becoming more and more a sense of luxury for civilized man; and that, perhaps, is the reason why poets, from the author of Song of Songs down, have associated all kinds of beauty and joy with perfumes.—*Popular Science Monthly.*

AN IRON RAIN.

Any clear night, if the watcher has patience, he may see one or more "shooting stars," or meteors. These are not stars at all, but often are more brilliant than any star, because they are so near us that their friction against the earth's atmosphere either causes them to glow at white heat, or to flame up like a torch. Even a very small meteor, one not much larger than a pin-head, might become distintly visible in this way, and seen against a background of constellations, outshine the north star. The whole solar system, astronomers say, is strewn with particles of matter known as star-dust, while larger bodies known as meteoroids, chase one another about the sun at intervals of a few miles. Usually when these meteoroids encounter the earth's atmosphere they break into small fragments and fall harmlessly to the ground. It is thought that only six or seven hundred of these meteoric stones reach the surface of the earth unbroken in the course of a year, while the number of small particles which fall has been estimated at 2,000,000 a day.. If the air did not act as a cushion, no casuality would be more common than being hit by a meteorite. Meteorites are usually composed of iron, silicon, and oxygen, the three elements which are most common in the earth, and as no new elements have been found in these visitors from space, it is believed that the solar system, and perhaps the universe, are made out of the same material as the earth. The motion of falling meteors is very curious. One has been known to travel on a line almost parallel with the earth's surface, and from sixty to one hundred miles above it, all the way from Indian Territory to Central New York, where it is supposed to have fallen into fragments. Another passed from Michigan across New York State, and out to sea between New York City and New Haven. These meteors travel six or seven hundred miles an hour after they become visible. Meteors are most common about August 10 and December 7, when the earth annually encounters droves of meteoroids as they journey around the sun. Once in 33 years the earth crosses the thin stream of Leonides, which seems to come from the constellation Leo, and is so long that six or eight years are required for this flock of meteors, traveling twenty six miles a second, to pass a given point. When the earth meets this great torch-light procession there is a display worth seeing. The next one will take place in November, 1899. Where meteors come from is not known. Whether they are fragments of a bursted planet or collected star dust can only be surmised. Once it was thought that they kept up the sun's supply of heat by running into him, but that theory has been abandoned. What is certain is that the planets are becoming somewhat larger and heavier every year through the shower of meteors and star-dust that is constantly falling. Thus it happens that while it never rains pitchforks, yet iron enough to make a pitchfork rains upon the earth every day.—*Harper's Young People.*

WHY SEALSKINS GO TO LONDON.

When sealskins are brought from the Pribyloff or the Commander Islands, they are unloaded at San Francisco and immediately reshipped in casks for London. At this stage they are scarcely more attractive than so many cowhides. The skins, when first shipped from the island, have been packed in pairs with the fur side out, and rolled into tight bundles that might be mistaken for so many salt-soaked and disreputable old muffs, if one did not notice that they are counted out upon the wharf as carefully as if they were so many gold pieces. In this unattractive shape they make their long journey.

In explanation of this expensive reshipment over 5,000 miles of sea and land it is stated that the fortunate and ingenious Englishman who discovered the process for dressing sealskin has very shrewdly kept his own secret all these years. Instead of patenting the process and thus divulging it to the world, he simply locked the secret in his own breast, and, with the aid of trusty employes, sworn so secrecy, for the past quarter of a century has been reaping the rich profits that are usually stolen from inventors under one pretext or another.

EGG MANUFACTURING.

Truly, this is a progressive age. The latest surprise comes from Philadelphia, where a man named Gross has discovered a process for making eggs. He has worked with models, and the results, it is said, are so satisfactory that he will establish a factory in Philadelphia at once. He claims he can make eggs for eight cents per dozen, and they can be sold for a good profit of ten cents all the year round. He guarantees they will never spoil, and, whether fresh or old they will always taste like a newly laid egg, and will build up as much tissue in the human frame, if eaten, as the genuine. The only thing Mr. Gross fears is that as soon as he is launched the farmers will combine and have a law passed knocking him out, as they have floored the oleomargarine men. The shells are made of paper mache baked hard and cast in molds the shape of an egg. A small hole is left in one end, and first the white is put in and then the yelk. The manufacture of the shell is simple enough, but Mr. Gross declines to tell by what process or out of what materials he produces the interior of the egg. He says he has applied for a patent and this part of his invention must remain a secret until his rights are secured.

One defect in the method of manufacture must yet be overcome, and Mr. Gross thinks he can successfully accomplish the fact in time. After the contents of the egg are put inside, the difficulty is to seal it. At present the seal is easily broken, especially if the egg is boiled. Speaking of the arrangement inside, Mr. Gross said that the yelk is likely to be in any position, but under no circumstances will the white and yelk mix. In some eggs he had broken, the yelk was found in the centre, in others it was in one of the ends.

Mr. Gross claims for his eggs all the virtues possessed by the real article. It can be used for all purposes in cookery. It can be eaten like the hen's egg, and assists in producing delicious cakes of all kinds. The white may be used for frosting and icings, and lastly, the manufactured egg may be served on the table. It is easily boiled, fried, poached or scrambled.—*N. E. Grocer.*

A MILLION-DOLLAR MANTLE.

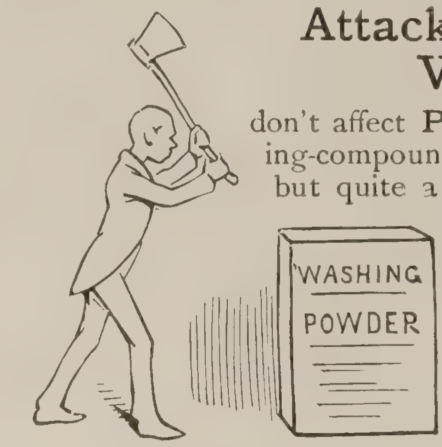
A HAWAIIAN TREASURE.

A priceless garment that has enveloped the forms of Hawaiian kings, is on exhibition at the National Museum, Washington. It is known as the "million-dollar mantle." It once enveloped the kingly form of Kekuaskalian, one of the highest chiefs of the Sandwich Islands, in whose reign it was completed, nearly a hundred years after it was begun. Upon the death of Kekuaskalian, who fell in battle, it became the property of his enemy, King Kamehameha III, by whom it was presented to Captain J. H. Aulick of the United States Navy: "The foundation of this most remarkable cloak is a network of olona, or 'native hemp,' and to it are attached by threads of the same material feathers of native birds, found only in the Hawaiian Islands. The entire body of the mantle is made up of small red and yellow feathers, the latter ones being obtained from the Oo or Uho (*Mohan nobitis*), a bird extremely rare, and possessing but one or two of these yellow feathers which are found under the wings. The bird is captured alive by means of the 'lime trap,' and when deprived of the precious feathers is set at liberty. Great price is set on these feathers by the Crown. They are used as money in buying and selling, and are accepted by the Government in payment of taxes. The red feathers are obtained from the most abundant bird on the island, the *Drepnois coccinea.* The feathers are placed so as to overlap, thus giving a smooth surface to the interior of the cloak. The upper and lateral borders of the mantle are decorated with alternate tufts of red, yellow, and black feathers, but only on the margin are the black feathers used, which are obtained from the Uho. In the center is a large, crescent-shaped figure of yellow feathers, surrounded by a belt of red, which blends in the middle of the belt on either side with a succeeding strip of red, the outer margins of which are divided by two wedge-shaped processes of yellow. From this last-named figure on either side to the circumferences are alternate parallel stripes of yellow and red, about six inches broad, The upper circumference of the cloak, where it fastens about the neck, is about twenty inches, the lower one being seven or seven and a half feet, thus forming a cloak capable of amply enveloping a very large person. These feather garments were at one time considered the greatest possessions of the Crown, but the costumes of European and American manufacture have superseded them, and they are no longer manufactured on the islands."

CONCATENATION OF CIRCUMSTANCES.

"Many a man," says DeQuincy, "has dated his ruin from some little murder, which perhaps he thought nothing of at the time." Grotesque and startling as that proposition may seem at first sight, the concept really has in it nothing more strange than we can see at any time in the real sequences of cause and effect, if we will only open our eyes to them. Appreciative fancy may tempt us to smile at the grim humor of his averment that "once a man addicts himself to murder, very soon he comes to highway robbery, to Sabbath-breaking, profanity, and even procrastination," but we will do well to think soberly of the solemn fact that of no cause, however trivial and insignificant it may in itself appear, can we say with certainty it cannot be productive of the most tremendous causes. It will be a fascinating and possibly somewhat alarming mental exercise for one who has never before attempted it to retrace in memory, as far backward as possible, the chain of circumstances leading up to any one of the most important events of his life. He will be likely to find its remotest link—within his recollection—something so utterly foreign and inadequate to casual seeming that it will astound him. Looking no farther than the end of your nose you attribute the pneumonia which now threatens your life to having got your feet wet two or three days ago. So far, you are no doubt right. But how did you come to get your feet wet? Would it surprise you to find, as one link in the chain to it, your typewriter's jealousy concerning her "best young man"? concerning which you knew nothing. But if her mind had been on her work, instead of on him, she would not have blundered in that letter making an important business engagement for you; you would not have had to leave home by a preposterously early train and in your unwonted haste have forgotten your rubbers. See how little away back you have gone, yet where your retrospect has reached already.

All this is simply to impress on your mind the consideration that absolutely nothing is unimportant or devoid of infinite potentialities. The insignificant cold one is apt to think so lightly of and expect to have "go away of itself" will truly be an exception to its kind if it does anything of the sort. It is more likely to gradually grow worse. To-day, it may be coryza; to-morrow, laryngitis will probably add to its claims upon attention; in a day or two more tonsilis will develop: then bronchitis, or possibly pneumonia. Then the doctor is sent for in hot haste, and if the sufferer has reached the pneumonia stage, the physician may as well bring with him the card of his friend the undertaker. It is really very sad to see how prone even the kindest and best-intentioned parents are to neglect the colds of their children, certainly not through lack of affection or unconsciousness of responsibility, but simply from failure to realize how serious even trifling ailments of this class may suddenly become. No well regulated household, especially one in which there are children, should, at this season of the year, be without a bottle of Ayer's Cherry Pectoral, ready at hand for use in the emergencies almost certain to occur. It is a remedy that in any stage of laryngeal or bronchial affections gives prompt relief, and if employed in the early stages of such attacks is an immediate cure, infinitely more reliable than any other preparation known to medical science. Not an unimportant advantage possessed by it is that is of agreeable flavor and consequently easy of administration to children. Physicians recognize it as a standard remedy.



Attacks on
Washing-Powders

don't affect **Pearline**. **Pearline** is a washing-compound, in powder form, to be sure, but quite a different thing. It's made so that it acts upon dirt as nothing else will, but can't possibly do any harm to substance, hands or fabric.

Soap-makers are advertising against washing-powders, claiming that they ruin the clothes. They're more than half right. But chemical analysis and the experience of millions of women prove that **Pearline** hasn't the power to harm clothes that soap has. And it saves all that ruinous rubbing that you have to use with soap, besides.

Beware Peddlers and some unscrupulous grocers will tell you, "this is as good as" or "the same as Pearline." IT'S FALSE—Pearline is never peddled, if your grocer sends you an imitation, be honest—*send it back.* 39b JAMES PYLE, New York

Indigestion

Horsford's Acid Phosphate

Is the most effective and agreeable remedy in existence for preventing indigestion, and relieving those diseases arising from a disordered stomach.

Dr. W. W. Gardner, Springfield, Mass., says: "I value it as an excellent preventative of indigestion, and a pleasant ascidulated drink when properly diluted with water and sweetened."

Descriptive Pamphlet free.

Rumford Chemical Works, Providence, R. I.

Beware of Substitutes and Imitations.

For Sale by all Druggists.

HIS INVARIABLE RULE.

"Dear Miss Mildred," wrote the young editor, "I find it impossible to tell you by word of mouth what I have been longing for months to say. My palsied tongue refuses to do the bidding of my will when I am in your presence. I am under the necessity, therefore, of writing to you to tell you how inexpressibly dear to me you have become and to ask if you will consent to be my wife. In replying please be brief, omit the discussion of unimportant topics, and write only on one side of the sheet "—*Chicago Tribune.*

◆

No one can have joy to-day who is worrying about to-morrow.

The people who need your prayers most are those you don't like.

Nothing keeps a stingy man from stealing but the risk of the thing.

The devil never puts on mourning when a stingy man joins the church.

A revival is in good condition when taking up a collection won't chill it.

"Do you ever have to mind the baby?"

"Not yet; but I s'pose I will when she gets older, that is if she's got any of her mother about her."—*Atlanta Constitution.*

◆

CATARRH CANNOT BE CURED

With LOCAL APPLICATIONS, as they cannot reach the seat of the disease. Catarrh is a blood or constitutional disease, and in order to cure it you must take internal remedies. Hall's Catarrh Cure is taken internally, and acts directly on the blood and mucous surfaces. Hall's Catarrh Cure is not a quack medicine. It was prescribed by one of the best physicians in this country for years, and is a regular prescription. It is composed of the best tonics known, combined with the best blood purifiers, acting directly on the mucous surfaces. The perfect combination of the two ingredients is what produces such wonderful results in curing Catarrh. Send for testimonials, free.

F. J. CHENEY & CO., Props., Toledo, O.

Sold by druggists, price 75c.

NOTES AND QUERIES.

We are desirous of making this column of service to our subscribers and wish to have them feel at perfect liberty to ask any question that may occur to them. We will be pleased to take great pains to obtain any information we may not have If not of general interest we frequently answer these questions by mail.

For want of space, or time to investigate, many questions received remain unanswered for some time. Each query on any legitimate subject will in its turn receive proper attention. Correspondents are requested to write plainly and state their wishes concisely.

The following answers to correspondents in the *Popular Science News* contain so much valuable information, we quote them.

T. C. P., Illinois: Most writing inks are pale when first used, afterwards becoming darker. What is the cause of the change?

A.—Inks consist principally of the tannogallate of iron. When first made they contain this salt in the *ferrous* condition, in which it is nearly colorless. On exposure to the air it absorbs oxygen and becomes converted into the *ferric* tannogallate, which has the familiar intense black color.

L. N. D., Boston: What is the derivation of the name "arrow-root," given to a certain form of starch?

A.—The starch popularly known as "arrowroot" is obtained from the roots of certain tropical plants which in their native condition contain a poisonous juice sometimes used by the natives to poison the tips of their arrows.

Subscriber: A large part of the sulfur of commerce comes from Sicily, where it occurs in large quantity in the native condition upon the slopes of Mount Etna. It can also be economically extracted from iron and copper pyrites, which occur abundantly in nearly every country. There is hardly an industry which is not more or less dependent upon this valuable element in the form of sulfuric acid or oil of vitriol.

W. T. T., New York: What are the so-called meta-elements?

A.—They are certain meta's, such as yttrium, samarium, and others, which, while acting in almost every way like simple elementary bodies, can, by very careful chemical manipulation, be broken up into an indefinite number of bodies only very slightly differing from each other. These bodies are known as meta-elements, and their exact nature is not well understood. It will probably be necessary before long to radically modify our present theories in regard to the nature and condition of the so-called "elements."

E. J. M., Mass.: What is meant by the "explosion" of kerosene oil? Is it similar to that of gunpowder?

A.—Kerosene oil in itself is never explosive. The hydrocarbonate vapors which it gives off when mixed with a proper proportion of air will explode with great violence, in a manner analogous to the explosion of gunpowder. The difference between a safe and dangerous oil is in the temperature at which these combustible and explosive vapors are given off. Safety in this respect can be assured by always using the very best grades of oil in the market.

R. S. L., New Orleans: What are the safety plugs composed of which are placed in electric lighting circuits?

A.—They are composed of a short piece of wire of some fusible metal, the conductivity of which is graduated to the strength of the current. If, from the crossing of the wires or any other cause a stronger current is sent through the circuit, it at once melts the fusible circuit metal and breaks the circuit completely, thus preventing any danger to buildings or fixtures from the stronger current

FRIDAY.

Moscow was burned on Friday.
Washington was born on Friday.
Shakespeare was born on Friday.
The Mayflower landed on Friday.
America was discovered on Friday.
Lincoln was assassinated on Friday.
Richmond was evacuated on Friday.
The Bastile was destroyed on Friday.
Queen Victoria was married on Friday.
Fort Sumter was bombarded on Friday.
King Charles I. was beheaded on Friday.
Napoleon Bonaparte was born on Friday.
The battle of Marengo was fought on Friday.
The battle of Waterloo was fought on Friday.
Joan of Arc was burned at the stake on Friday.
The battle of Bunker Hill was fought on Friday.
The battle of New Orleans was fought on Friday.
The Declaration of Independence was signed on Friday.—*The Southern Congregationalist.*

CONSUMPTION OF PHOSPHORUS.

A single match requires from 1-200th to 1-100th of a grain of phosphorus for its production, yet the consumption of matches is so large that it is estimated that the total of 1,200 tons is less than the amount consumed in Europe in their manufacture.

There is an entrancing beauty in my lady's hair, as it descends from her crown adown the back of the chair; but alas! when it hangs on the chair back and my lady is far away, in another apartment, perhaps, its capillary affluence is not so much bewitching as beswitching.

SCOTT'S EMULSION

OF PURE COD LIVER OIL WITH

HYPOPHOSPHITES OF LIME AND SODA.

THE STANDARD EMULSION OF COD LIVER OIL THROUGHOUT THE WORLD.

A BEAUTIFUL CREAMY MIXTURE—ALMOST AS PALATABLE AS MILK.

Having much greater remedial power than the crude Cod Liver Oil, without any of its nauseating effects.

Its PALATABLENESS, EASE OF DIGESTION, and long tolerance by most sensitive stomachs as well as its reliable therapeutic effect, has given it special favor with the medical Profession, and receives their unqualified endorsement and support.

Possessing as it does the tonic and stimulating properties of the Hypophosphites in combination with the strengthening and fattening qualities of the Cod Liver Oil gives it a remedial value in WASTING DISEASES, ANÆMIA or IMPOVERISHED BLOOD, EMACIATION and CONSUMPTION—unequalled by any single or combined remedy in existence. The rapidity with which delicate children fatten and grow strong on this palatable Emulsion, is very remarkable.

Samples will be sent free except express charges to any wishing to try this preparation. For sale by all druggists.

SCOTT & BOWNE, New York.

CANNED VEGETABLES.

REPORT OF INVESTIGATIONS AND ANALYSES.

BY K. P. M'ELROY AND W. D. BIGELOW.

[Continued.]

COPPER GREENING IN FRANCE.

On May 20, 1881, M. Tirard, the minister of agriculture and commerce, addressed a circular to the prefects of police, calling their attention to the copper laws. Abstracted, it reads as follows:

"At this time, when the preparations for the season's packing of fruits and legumes are under way, I wish to call attention to the fact that the greening of these foods by means of salts or vessels of copper is formally prohibited.

"It is important that this prohibition be once more brought to the attention of the canners and retailers. They have lately obtained some opinions favorably to the copper process, but the Comité d'hygiene considering the question anew has decided that it should not be allowed by reason of the danger which it may present to public health.

"The Comité was influenced in demanding the continuance of the interdiction of the copper process by the fact that other processes exist which are in successful operation in large factories.

"Therefore I invite you to inform the packers and retailers of your department that they expose themselves to risk of prosecution if they green vegetables by means of copper."

M. Tirard issued a further circular on June 28, 1882. It appears that retailers prosecuted under the instructions of the previous circular had set up the successful defense that they were not mentioned in the law of 1860, which prohibited simply the use of copper in greening vegetables, and not the sale of such goods. This circular in substance read as follows:

"This interpretation is against the spirit of the law and against the interests of public health and can not be allowed.

"You [prefects of police] are therefore instructed to insert after (1) of the old law:

"'It is forbidden to all retailers or dealers to sell, or place on sale, preserves so prepared.'"

Probably as a result of the enforcement of the provisions of the circulars, though this is not shown by the accessible records, the subject was once more brought before the Comité, for in 1882 a fresh report was submitted to it. M. Gallard was again reporter. He was evidently getting tired of the ceaseless protests of the canners, for his report was severe and to the point. It is as follows:

"Gentlemen, the question of greening preserved legumes is once more before the Comité, and we can not hope for the last time; for, however wise, however just the course which the Government will pursue as a result of our deliberations, it can not fail to injure certain interests, which will as usual unite in alleging persecution and demanding revision of our decisions. The Comité in 1881, as a result of most careful investigation, recommended the renewal of the prohibitions placed upon the coppering process twenty years before, the principal reason given being the discovery of satisfactory and harmless processes for obtaining the same results.

"This was not enough for the canners, who have fallen into the habit of using salts of copper and do not wish to change, finding the old process more convenient and somewhat more economical. Two of the members of the trade, desirous of satisfying the requirements of the Government, have made the necessary sacrifices in seeking out a new process by which they can procure without salts of copper the green color which the customers insist upon, although it adds nothing to the nutritive quality of vegetables. The others have preferred to defy the law, alleging that conformity to it would ruin a national industry. This argument, which must necessarily have weight with the statesmen in charge of commerce and industry, is a flagrant error which we can not leave uncorrected. In our previous report, April, 1881, we have indicated processes now in use by manufacturers by which they are able to produce, without employing a particle of copper, legumes of a green color, apparently as well preserved as those containing copper. These canners, whose efforts the Government is desirous of encouraging, are as well worthy of consideration as those who have refused to conform to the law, and it would be as beneficial to the industry of the country to make their process general as it would be to remove the prohibition resting upon copper. The use of copper is not so beneficial as might be supposed to our trade. London merchants selling Parisian coppered preserves have been prosecuted in the police courts. The suspicion placed upon our products, if perpetrated, will work more injury to our foreign commerce than a prohibition which is known to be based upon so important a concern as that of the public health.

"From this point of view neither commerce nor industry is especially interested as to whether the prohibition stays or goes. It remains to be seen whether the question is equally indifferent from a hygienic standpoint. The time is past, it is fair to say, when copper, still regarded as a violent poison, was charged with various misdeeds; when one could not suffer from colic or indigestion without blaming an imperfectly tinned copper saucepan; when pathologists described copper colic along with lead colic and regarded the effects of the two metals as analogous and equally dangerous. We know now that poisoning with copper is so difficult to realize that it may be regarded as practically impossible, and that in any case to cause death or even serious illness, extremely large doses are required. It is also established beyond the possibility of question that preparations of copper ingested in small doses cause no injury to health. The case of workers in industries which employ large quantities of copper or its compounds, or of the canners, who almost daily use the greened vegetables, leaves no room for doubt on the latter point.

"But on the other hand it is also equally well known that copper salts administered in sufficient doses have a decided physiological action, which may under favorable circumstances become serious. The action is confined to the digestive organs, causes vomiting and diarrhea, and is invariably temporary. Copper could imperil life only when taken in excessive doses often repeated at short intervals. It is absolutely impossible that any dangerous result should follow from the small quantity of copper necessary to green legumes, a dose estimated at from 16 to 20 mg per kilo. However, this limit, which is that given by partisans of the absolute innocuousness of copper salts and by the interested canners, cannot be relied upon. In the analyses of Galippe the quantity of copper found varied from 14 to 18 mg per kilo, but Riche and Magnier de la Source found as little as 16 mg for petits pois and as high as 35, 40 and 45 mg in green beans. According to Pasteur the quantity is from 80 to 100 mg of copper per kilo. I myself received a sample prepared as follows:

"Forty-five liters of small peas were plunged into about 120 liters of boiling water, to which had been added 45 grams of copper sulphate. I submitted this sample to M. Chatin, who, having analysed it with the assistance of M. Personne, declared that it contained the enormous proportion of 270 mg of copper per kilo of peas taken without the juice. Chatin persisted in his statement, although it was doubted by some members of the commission. I should add that using M. Chatin's figures for the copper remaining in the coppering bath and the 270 mg number, the entire amount of copper sulphate used can be recovered by calculation. In other samples from the same house furnishing the one just cited, the proportion was not so great, falling as low as 170 or 180 mg per kilo, amounts, however, still in excess of that reported by Galippe and by the canners in their statement to the minister. In the samples from the same source, analyzed in the laboratory of Wurtz, the amounts fall still lower, but even these reached 78 to 80 mg per kilo. On miscellaneous samples sold under various names, the results ranged from 175 to 195 mg. Results obtained with the permission of the prefect of police from the municipal laboratory of the city of Paris varied from nothing or a mere trace to 184 mg per kilo. The extreme limit was found in a sample of peas (petits pois) sent in, while in the samples seized by the police the largest amounts were 36 mg in 'haricots flageolets,' 128 mg in 'haricots verts,' and 14 in 'petits pois.' The differences may have been due to the degree of

"If it were DONE when 'tis DONE, then 'twere well it were DONE QUICKLY."
—*Macbeth.*

and if it is a **Croquette**, or an **Oyster**, or a **Pie**, or a **Doughnut**, or a **Biscuit**, or any other article that needs

SHORTENING

when 'tis *done*, 'twill be *better done* as well as *more quickly done* if you use

Cottolene

The Vegetable Shortening.

It is purer than lard; it is without the objectionable flavor of lard; it heats quicker than lard; it browns better than lard, and does not make food greasy and indigestible as lard does.

Ask your grocer for Cottolene, and accept no imitations. Sold everywhere in three and five pound pails.

Made only by
The N. K. Fairbank Company,
CHICAGO,
New York, Boston,
Philadelphia,
San Francisco,
St. Louis, Montreal.

maturity or to the thickness of the cortical envelope of the legume.

"At any rate, the diversity of the figures obtained shows that it is quite possible to introduce into the legumes much larger proportions of the metal than are necessary for greening. This proportion being always given as from 16 to 20 mg. it is easily seen that it is habitually exceeded. It is repeatedly asserted that if the limit were overstepped to any extent the vegetables could not be used, the copper revealing itself to the taste. The reporter has not altered his opinion on this subject, expressed in 1881, for he himself has frequently eaten and had others eat unawares preserves containing anywhere from 180 to 270 mg of copper, and no objectionable flavor was detected. These two points may be considered perfectly established: First, that the limit of 16 to 20 mg of copper is habitually passed; second that vegetables are capable of absorbing a quantity of copper sufficient to affect the health of the consumer without beytraying the fact to the taste. Although most of the commission of 1881 recognized the innocuousness of copper in the quantities in which it is found in preserved vegetables, the majority thought that in certain exceptional cases it could become injurious, and that since it is not indispensable to the manufacture of greened vegetables, it was not desirable to repeal the original prohibition, judging it unwise to open the door to abuses which would not fail to follow were any toleration granted. There is a simple method of reconciling the conflicting interests, affording the interested canners an opportunity to place their goods before the public and leave there the responsibility of choice. This measure, originally the suggestion of Pasteur and the recommendation of two previous commissions, is simply to require each canner to inscribe on his label in distinct characters the nature of the substances added to the vegetable in the process of preservation. Numerous objections have been made to this proposition. It has been claimed that it would be equivalent to a prohibition, since the public in its ignorance would never consent to buy goods bearing this label, but it was rejected principally because in the present state of our legislation it is impossible to force the canners to comply with it. The question has not been allowed to rest by those who are fearful lest their business suffer if the public is to become aware of the presence of copper in their goods.

"The association of canners at Paris, that at Bordeaux, and that of Brittany and the Vendée have appealed to the minister for authority to continue the use of copper. The process to be considered not only from a hygienic standpoint as rendering the product injurious to health, but from the commercial side as constituting an adulteration by which goods are given a color which they do not naturally have, and which the simple process of preservation would not impart. Therefore it is an adulteration and should be prosecuted as such by the authorities.

"If the prefect of police has the right to demand that margarine and its products be marked as such, and if the Comité at its last session saw fit to advise the measure, why has not the government the right and power to pass an analogous measure in the case of legumes prepared by the copper process? If it has not the right there is still the resource of proposing to Parliament the adoption of a law that will give them the right. It would be desirable not only for the present case but in all cases in which industry considers it indispensable to introduce into food—either liquid or solid—a foreign product which does not figure in it naturally, either for the purpose of improving it or of facilitating its preservation. The object is not merely to preserve the public health, but above all to secure good faith in commercial transactions by preventing manufacturers from altering in any way the nature of an alimentary substance without due notification of the fact. A law like this would not have to fix, as has been demanded, the limit where a certain substance becomes dangerous and is therefore to be absolutely interdicted—a point extremely difficult to establish except in the case of undoubted poisons. It is understood of course that such a law would not be applicable in the case of substances whose poisonous nature is known beyond the possibility of doubt—for example, lead, arsenic or mercury, which must always be entirely prohibited, but only to those whose toxic effects are sufficiently mild to admit of doubt.

"It is not possible to impose upon us the alternative—'if it is poisonous, prohibit it: if not poisonous, allow unreserved toleration'—for we have previously established that it is not usually poisonous, but may in exceptional cases become so, which, although it does not authorize absolute prohibition, certainly justifies warning. This, it seems to us, would be adequately furnished by the label. It is claimed that it would be impossible to secure the conviction of offenders. This is a profound mistake. On the contrary, magistrates would find themselves much relieved by the removal of the necessity now existing of arbitrarily deciding as to whether the substance added to the food was of a dangerous nature, but having established the presence of the substance and the fact that the label bore no announcement of its presence, decision would be as simple as in the case of the dealer who has added water to milk or wine. Accidents are disposed of. If a labeled can contains enough of the substance to injure the health of the consumer, the canner should be liable to prosecution exactly as is the pharmacist who substitutes 50 mg of an emetic for 5 mg.

"This law would be useful. It protects all interests, those of public health as well as those of commerce and industry. It is desirable that it be made for the present the subject of study and presented with as little delay as possible for the consideration of Parliament. Further it would be well, indeed indispensable to this law, that it require the label to give, along with the substances added in preservation, the year in which the preservation took place. This was suggested in 1881:

"'To permit a correct judgment of the comparative efficacy of the various processes of preservation it would be well that each package of preserves should bear the date of its preparation. This would be a salutary measure, and incidentally we recommend it.'

THE ORIGINAL CORN STARCH.
50 YRS. 50 YRS.
KINGSFORD'S OSWEGO STARCH
THE ORIGINAL
PUREST
STRONGEST
BEST
Highest Awards
CHICAGO, PHILADELPHIA, LONDON.
1893. 1876. 1851.
Try "SILVER GLOSS."
T. KINGSFORD & SON. Manufacturers. OSWEGO, N.Y. U.S.A.
SOLD ALL AROUND THE WORLD.
BEST QUALITY IS GOOD ECONOMY.
THE STANDARD OF EXCELLENCE FOR OVER FIFTY YEARS.

ESTABLISHED 1823.

ALEX. YOUNG CO., LIMITED,
DISTILLERS OF
Y. P. M. WHISKIES

DISTILLERY, - Nos. 408, 410, 412 and 414 South St.
MALT HOUSE, Nos. 416, 418, 420, 422 and 424 South St.
STORE, - - - - - No. 700 Passyunk Ave.
PHILADELPHIA, PA.

New York Office, - - - 78 Wall Street.
FOR SALE BY
ACKER, MERRALL & CONDIT and PARK & TILFORD.

"This view, advanced somewhat cautiously, was taken up by the Conseil d'hygiene et de la salubrité d'Alger in a deliberation which has been sent to the Comité for examination. We can only approve, for the processes of preservation, however perfect, are not indefinite, and the public is exposed to deception in buying hermetically sealed boxes of foods which on opening prove to be entirely spoiled. This is not infrequent, especially in the case of meat and fish. It is true that if the measure be adopted the buyers will not fail to select the freshest products and the canners will not fail to denounce the Comité and to charge them with injuring the national industry in throwing back upon their hands old or damaged stock. But the consumers will gain, and this should be the consideration of the Government to whom is intrusted the welfare and health of the people.

"The green color desired by the consumer, although it does not enhance the nutritive quality, can be obtained without the use of copper salts.

"The quantity of copper strictly necessary to impart the coloration is so small that it can not cause danger or injury to health, but if by carelessness or mistake the quantity is materially increased, it can cause serious though temporary trouble in the health of the individuals who consume the product thus prepared.

"The commission think that the possibility of such accident is sufficient reason for maintaining the prohibition on salts of copper.

"The public would be sufficiently protected from the accidents if it were possible to draw attention to the presence of copper by imposing upon canners the obligation of announcing by means of labels in legible characters the presence of the metal. For these reasons we propose that the Comité reply to the minister:

"Since present legislation does not confer upon the administration sufficient authority to permit it to require the canners to announce by labels any substances added by them to the preserved foods, whatever their nature, it is necessary both in the interest of hygiene and commercial honesty to demand of Parliament the enaction of a law requiring merchants and canners to place upon their labels an announcement of any such addition, and further to accompany this with the date when the preserves were prepared.

"It is not necessary to remove the prohibition resting upon copper before the passing of this or any other law tending toward the same end."

After discussion the Comité presented the following report:

"In the actual state of science it is not shown that the greening of preserved foods by salts of copper is absolutely without injurious effect, and therefore it is not advisable to remove the prohibition."

Decided as was Gallard's second report it was by no means accepted as final.

[To be continued.]

◆

The sugar planters, or somebody, have been raising cane in the Sandwich Islands.

◆

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ADULTERATION.

BARYTES.

There are various ways of doing things. One is the straightforward way; then there are devious and crooked paths, and sometimes these latter are followed while seeming to warn against them. The hint contained in the following circular, that "it is not injurious, if by carelessness some gets in the candy," is false but tempting, and that "barytes weighs very heavy," is clearly meant to urge its use as an adulterant, for surely its weighing heavy does not commend its use for cleaning purposes only. Its cheapness will help its sale for either purpose. There are no doubt many confectioners who will be deceived by this specious circular:

"Do you use barytes? We beg to call your attention to inclosed sample. You probably use it under some other name as White Mineral, etc.

"There is nothing as cheap for polishing your candy pans and kettles.

"It is not injurious, if by carelessness some gets in the candy.

"It weighs very heavy—a sugar barrel full, eight hundred and fifty pounds.

"Prices range from one cent per pound to one and one-half, delivered to you."

The general tenor of the above has a very suggestive flavor.

BUTTERINE.

Butterine, oleomargarine or artificial butter has for years been used largely in Europe, particularly among the bakers and confectioners, who much prefer it to inferior butter and some brands of lard. These tradesmen have found by experience that a good artificial butter is better, sweeter and richer than the grades of natural butter formerly used. They have also ascertained that butterine keeps much longer on account of its non-liability of lactic fermentation. The oleo business over there is openly carried on, being advertised freely, while the product is quoted regularly in the market reports and price lists.

There is no necessity for concealment or substitution. The article is retailed without disguise on its own merits. Why should the American baker, confectioner or grocer not use butterine freely? The reply, of course, is that there are laws on the statute books of several States practically prohibiting its use. The question of the constitutionality of such laws in the State will shortly come before the Supreme Court of the State. We hope that the common sense view on the subject held by nine out of every ten business men will receive endorsement by the highest of our State tribunals, and thus a pure, useful and economical product be added to the food of the people.—*National Provisioner.*

GLUCOSE A HEALTHY PRODUCT.

The National Academy of Sciences, at the request of the Commissioner of Internal Revenue, made a report recently on "the composition, nature and properties of glucose," from which we extract the following interesting data. He says:

This industry sprang into existence during the Continental blockade under Napoleon I, after which it disappeared for some years. It has gradually revived, and is now an established industry both in Continental Europe and in the United States. The irregularity of demand for the product depends largely upon the comparative price of corn, and of molasses and cane sugar. At the time of the last census the capacity of the factories in the United States was estimated at forty-three thousand bushels of corn per day. Payen, in 1854, estimated the French production from potato starch at fifty-five hundred tons per year; and Wagner, in 1874, estimated that of the German Empire at nineteen thousand eight hundred tons of syrup and twenty-seven thousand five hundred tons of sugar per year.

The committee reported the following conclusions:

1. That the manufacture of sugar from starch is a long established industry, scientifically valuable and commercially important.

2. That the processes which it employs at the present time are unobjectionable in their character, and leave the products uncontaminated.

3. That the starch sugar thus made and sent into commerce is of exceptional purity and uniformity of composition, and contains no injurious substances.

4. Though having at best only about three-fifths the sweetening power of cane sugar, yet starch sugar is in no way inferior to cane sugar in healthfulness, there being no evidence before the committee that maize-starch sugar, either in its normal condition or fermented, has any deleterious effect upon the system, even when taken in large quantities.

BRITISH ADULTERATIONS.

FINE FOR MILK ADULTERATION.

At the Manchester Police-court, on December 20, John Baker, shopkeeper, Bentinck street, Hulme, and Joseph Clay, milk dealer, Augustus street, Stretford, were charged with selling adulterated milk. Baker's shop was visited by an Inspector, who took a sample of the milk, which upon analysis showed that 30 per cent of fat had been extracted. This defendant, however, pleaded that the milk was sold in the same condition as it was got from Clay, who supplied him. Thereupon a sample of milk sold by Clay was taken and found to be deficient in fat to the extent of 35 per cent. In both instances there was also a small percentage of added water. The defendant Clay, who urged that he retailed the milk in the same condition as he received it at the railway station, was fined £10 and costs. The summons against Baker was withdrawn.

VINEGAR PROSECUTION.

At Nuneaton Petty Sessions, Richard Samuel Green, grocer, Nuneaton, was summoned by Inspector Poultney, under the Foods and Drugs Act, for selling an article purporting to be vinegar, which was adulterated with acetic acid and water colored brown, at Nuneaton, on November 14. Defendant pleaded guilty. Mr. J. H. Bland (Clerk to the Local Board) prosecuted. Defendant said he bought the article as "wood vinegar," whereas Inspector Poultney asked for malt vinegar. The bench inflicted a fine of £1 9s. 6d.

BAKING POWDER AGAIN.

At Edgware Petty Sessions, Sarah Brown, of Little Stanmore, was summoned for selling baking powder adulterated with 20 per cent of potash alum, on November 22 The case was adjourned for a month, pending the decision of the Court of Queen's Bench as to whether baking powder is an article of food.

AN OBJECT LESSON IN ADULTERATION LAW.

At Westminister police court, of January 9, George Wallington, Rutland-terrace, Pimlico, was summoned by the St. George's, Hanover square Vestry, under the Adulteration Act, for selling as butter a compound containing 20 per cent of foreign fat. The defendant gave evidence that the butter was introduced to him simply as "Dutch," and that he only got 1d. per lb. profit on it. He bought it from Mr. Stanford, of Sussex street, Pimlico, who in turn deposed that he purchased it from Mr. Harris, of West Smithfield. Mr. Hitchens, who prosecuted, said that either party could have protected himself with a warranty. Mr. de Rutzen remarked that entering into a sort of history of the butter, after the manner of the house that Jack built, did not in the slightest degree exonerate the selling to the public. The defendant might have been imposed upon, but as he had not chosen to protect himself he would be fined £5 and the costs.

ADULTERATED PEPPER.

At the Wolverhampton police court, on January 5, William Ellis, grocer, Prince's End, was summoned for selling pepper which contained 15 per cent of ground rice. It was pointed out by Mr. Morris, the Inspector, that while rice was 3d. a pound, pepper was 1s. 8d. A fine of £1 and the costs was imposed.

MR. WILLIAM BROWN'S LATEST DODGE.

At Thames police court, on January 7, John R. Samuel, of 12 Maritime street, Mile-end, pleaded guilty to selling skim milk adulterated with 10 per cent of added water. Charles Cox, Sanitary Inspector, said when he bought a pint of skim milk defendant said, "You know what you are buying?" The Analyst's certificate showed there was 10 per cent of added water in it. Defendant said he had an accident, and had to make it up with water. He was in the service of Mr. Brown. Mr. Dickinson decided to hear the case against the defendant's employer before giving his decision.—William Brown, of South grove, Mile-end, the employer of the last defendant, was summoned for a similar offence. Defendant pleaded not guilty, and said the Inspector admitted two other samples were taken the same day, and these were found to be genuine. He sent the milk out as he received it. It was his man who had tampered with it. He was unable to prevent that. Mr. Dickinson said he must convict, and defendant would be fined £20 and 23s. costs. Samuel would be fined 40s. and 2s. costs.

ROOTING OUT THE SPURIOUS YEAST FRAUD.

Mr. John W. Beeby, grocer, Skirbeck, was summoned at North Holland Petty Sessions, on the 5th, for selling yeast adulterated with 16 per cent of potato starch. Defendant pleaded that he sold the yeast in exactly the same condition as he received it from the wholesale house, and he was fined 5s. and costs.

We warned grocers over three months ago of the danger and prevalence of yeast adulteration, and Mr. Beeby has only himself to blame for his misfortune. If he bought it as pure yeast he ought to prosecute the wholesale house for damages.

◆

Undoubtedly there are dishonest, as well as honest lawyers; but the dishonest lawyers are not the successful lawyers that are on our side.

First Tramp—These Fifth avenue people are very unreasonable with us.

Second Tramp—Yes; never give money and lecture you for being dirty.

First Tramp—And yet, when I rang and asked for a bath only, I was refused.—*Life.*

CANNED VEGETABLES.

REPORT OF INVESTIGATIONS AND ANALYSES.

BY K. P. M'ELROY AND W. D. BIGELOW.

[Concluded.]

COPPER GREENING IN FRANCE.

In February, 1886, the association of Parisian canners (Chambre syndicale des fabricants de conserves alimentaires de Paris) complained to the minister of commerce and industry of being hampered in their trade by the copper laws, stating that the buyers in the United States had advised them that their importations must be diminished were the canned vegetables shipped no longer coppered, for American commerce demanded the regreened legumes. It was also stated that London merchants had written them to the same effect, stating that vegetables of the natural color would not be acceptable. Furthermore the canners stated:

"We do not know any practical and approved method of giving leguminous preserves the green tint demanded in trade, especially in foreign trade, except that depending upon the addition of an infinitesimal dose of copper salts during preserving. A trade of fifty years' standing demonstrates the perfect innocuousness of the amount employed. The Comité d'hygiene recognized in 1882 that copper sulphate in the quantities we use is harmless, but still maintained the prohibition on the ground that the manufacturer might use more copper than was necessary, and thus cause illness. In short, the whole industry is to remain under suspicion because some bungler may not know his trade. Attention is invited to the fact that the manufacture of copper-greened preserves occupies 20,000 workmen and represents 40,000,000 francs. Enforcing the prohibition would send this trade to foreign countries."

They close by saying that if salts of copper are as poisonous as has been claimed, the packers should be prosecuted in real eaarnest and thus given a chance to demonstrate in the courts the innocuousness of their products. They say in conclusion:

"If we are criminals, let us be judged seriously."

In May, 1887, the chamber of commerce of Nantes protested against the partiality with which the law was enforced, Parisian canners not being prosecuted. It demanded that if the proscription was to be continued, it be rigorously and impartially enforced.

The prefect of the Loire-Inferieure stated in connection with this protest that in his department several canners who strictly observed the ordinance were at a great disadvantage in competing with their rivals. The prefect said farther that the interdiction injured the interests of French trade, and requested that an examination be made into the matter as to whether the salts of copper were really dangerous, and requested that pending the results of the investigation the employment of small amounts of copper sulphate be tolerated.

In accordance with these requests a new committee was formed with Grimaux as chairman. Grimaux reported the results of the commission's labor to the Comite consultatif on April 15, 1889. Briefed, it was as follows:

"In 1860 salts of copper were still regarded as poisonous. Subsequent investigations have certainly modified this view.

"As for the report of my colleague, Gallard, in 1882, it does not appear to be justified, for his arguments are rather on the other side, his conclusions being based on the statement that other successful processes exist, which is contradicted by Bouchardat and Gautier. If there exists no other argument against the interdiction than that no accident has happened from the use of copper greening processes and that no other greening process exists, it seems that the Comite would assume grave responsibility in continuing the prohibition.

"Is it advisable to label these vegetables as suggested by Brouardel and Pasteur 'legumes au naturel' (natural legumes) in the one case and 'legumes reverdis au cuivre' (legumes greened by copper) in the other? This was not accepted by the Comite because it amounted to an interdict as the public, not being informed of the harmless nature of copper, would reject these goods and foreign markets would be closed.

"It has been proposed to mark in a special way packages intended for exportation and to limit the prohibition of salts of copper to those goods intended for home consumption, but this seems impracticable, and would furthermore expose the French goods to restrictions in foreign markets. There remain but two alternatives, absolute freedom or a prescribed limitation of the quantity of copper to be used.

"The duty of the hygienist is difficult in this matter. On the one hand his legitimate tendency is to proscribe the introduction into alimentary substances of all bodies which are not food and which are toxic in any degree, but in taking this as a rule we may put restrictions upon our industries, and this is a consideration which the interests of our country cannot afford to ignore. The fact that copper is found in the legumes in the state of insoluble albuminate leads us to conclude that there is no danger to public health in authorizing without restraint the use of the copper-greening process, but since the purchaser has a right to choose his food, it is deemed advisable to label the products of the two processes respectively, 'au naturel' and 'a l'anglais' (after the English manner). These are the conclusions which the reporter submits. One member of the commission, however, raised the point that as copper had some antiseptic action, it must have, even though not poisonous, some retarding influence upon digestion.

"Experiments were made upon this point by M. Gley. In one experiment 10 grams of haricots verts (green beans) colored by the copper process were cooked and ground with 10 grams of blood fibrin, and after covering with 60 cc of gastric juice, were kept at 45 deg. for forty-eight hours. The fibrin was entirely dissolved, but the beans were not attacked. This was because they are largely cellulose. In the second experiment 2 grams of copper sulphate dissolved in 40 cc of distilled water were added to 60 cc of gastric juice in which were placed 20 grams of blood fibrin, and the whole heated to 45 deg. for eighteen hours. At the end of this time the fibrin was entirely dissolved. These experiments did not allay the scruples of our colleague, who claimed justly that the experiments did not settle the question of the digestibility of the vegetables in question. A new set of experiments was then made with great care by M. Ogier, to determine the comparative digestibility of vegetables greened with copper as compared with those not so treated. M. Ogier concluded that there is nothing to indicate that the digestibility of greened vegetables is less than that of those 'au naturel.'

"Among the facts furnished by our work are these:

"That the quantity of metallic copper contained in green legumes of commerce is about 13 mg. per kilo; that with 10 mg. they are sufficiently colored, and that 40 mg. impart a taste which renders them inedible.

"We propose that the Comitè consultatif reply to the minister that it is of the opinion that in view of the present state of our knowledge of the toxic effects of the salts of copper, it is not necessary to interdict the process of greening with salts of copper.

The report was approved by the Comite consultatif d'hygiene on April 15, 1889.

On April 18 a ministerial circular was issued, raising the prohibition on the use of copper-greening for preserved foods, directed to the various prefects. It read as follows:

"Three ministerial circulars—(1) December 20, 1860; (2) May 20, 1881; (3) June 20, 1882—have been addressed to the prefects instructing them to take action to prevent manufacturers, merchants and retailers from employing vessels or salts of copper in the preparation of preserves of fruit and legumes destined for alimentation; also to prevent selling or offering for sale goods thus prepared.

"This prohibition was based upon the repeated statement of the Comité consultatif d'hygiene publique of the danger of poisoning from the introduction of copper sulphate in frequently repeated doses into the human system.

"The action in such cases of salts of copper upon health had not at that time received the careful study which has since been given to the subject.

"In the last few years new studies and extended experiments which have been now brought to a successful close, have resulted in the establishment of facts hitherto doubtful.

"The question having been submitted anew to the Comité consultatif d'hygiene publique, it has also conducted experiments to determine the dose which can be safely ingested and the proportion contained in copper-greened vegetables.

"From this it has been concluded that the recent knowledge acquired was of such a convincing nature as to justify them in no longer opposing copper greening.

"I have the honor, therefore, to call your attention to this conclusion.

"In order to promote the interests of commerce and to render to it the satisfaction so long denied, it is for you to take action conformable to this circular. Let the necessary measures be taken without delay, and let information of the execution of the order be transmitted."

Nothing is said in this circular relative to the distinction between the two classes of goods which was proposed by Grimaux—possibly because it would not look well upon the records. The matter may have been left to the discretion of the prefects. In the samples of canned vegetables examined in this laboratory, those French goods marked "au naturel" always contained copper, and though those marked "a l'anglaise" usually did so also, there was one which did not, the pea sample No. 10629. This sample, however, contained a large amount of zinc, as a compensation.

The raising of the prohibition was done with much haste as is evinced by the close correspondence between the dates of the report of the commission and the date of the ministerial decree. The proposition of M. Grimaux to mark the distinction between coppered vegetables and those not so treated, by a meaningless combination of words like "a l'anglaise," meaningless, that is, in this connection, can scarcely be viewed as a happy one, taken from an ethical standpoint.

The statement of the canners and others, that if coppered vegetables bore a label announcing that fact in so many words, no sale could be effected, was naive. The whole struggle in France over the copper question may be summed up in a few words. Certain packers of food products wanted to use in preparing their goods a substance which, rightly or wrongly, was viewed by the consumers of these foods with distrust, and, being aware of this fact, petitioned for permission to add this substance without the knowledge of their customers. The Government, acting upon the counsel of its hygienic advisers, refused this permission for many years, but finally conceded it, acting, as it appears, altogether upon commercial considerations. The report of the scientific commission upon which this license was nominally based is also actuated by this motive, for M. Grimaux states this fact plainly, stating that if it were not for economic considerations his duty as a hygienist would lead him to another conclusion. His recommendation that the goods be marked when coppered, though with what is practically an arbitrary sign, does not appear in the ministerial circular, nor does any limiting amount, so that as far as the records accessible show, the French packer is at full liberty to add as much copper as he pleases and without advertising the fact in any way.

HYGIENIC.

INNATE RESISTANCE TO DISEASE.

One of the most important subjects presented for consideration at the International Congress of Hygiene and Demography, in London, last summer, was that of the power of resistance to the invasion of disease or immunity from disease because of inherent bodily forces. Some of the foremost bacteriologists of Europe presented formal papers and entered into the earnest discussion of this subject. The theory of the phagocytic (or germ destroying) action of the leucocytes (white blood corpuscles) and the germ destroying power of the cells of the blood serum were ably defended. Until Pasteur introduced preventive inoculation by diluted or attenuated virus, the only known immunity or protection against any disease was a previous attack of the same disease—vaccination for small-pox only excepted. Subsequently it was discovered that the leucocytes inclose and digest many kinds of foreign substances, including bacteria, and thus becoming phagocytes (destroying cells) whereby the microbes or bacteria perish by the absorption of a part of their substance, and thus quite differently from the manner in which death occurs by cultivation or by disinfectants. The rapidity with which these specific microbes, whether derived from direct virus or attenuation, are consumed or destroyed by the leucocytes is a measure of the vitality or resisting power of the person or animal.

There are some persons or some animals in which the microbes remain free from resistance, or where germ destruction does not occur, which indicates that in such animals the protective cells are of insufficient power to accomplish a successful defense against the invasion, and these are the animals which are susceptible to the disease, and succumb to its power.

It remains a question whether immunity is due to the power of the cells to include virulent microbes, or whether it depends on the absorption of virus by them. Sometimes the inclosed microbes enjoy full vitality, and virulent bacilli grow within and escape from the dead leucocytes.

At others, where the microbes are beyond the reach of the leucocytes, as in the anterior chamber of the eye of a rabbit, they grow freely until the leucocytes migrating thither check them. Why are the cells attracted to the microbes, and why do the leucocytes in some, that is, in susceptible animals, fail to seize them? It is suggested that the leucocytes are attracted to the bacteria by a chemical quality or affinity, and it is believed that the products of the microbes also exert a very marked chemical action on the phagocytes. The more active the proliferation of the poison germs within the body, the more energetic are the poisons it elaborates, and the cells which penetrate the toxic focus are paralyzed and become incapable of interfering with the microbes. Sometimes, as in chicken cholera, the toxine formed is still more virulent and actually repels the leucocytes, so that phagocytes are never found in this disease. But in animals immune by attenuated virus, by a suitable dose of bacterial products, this does not occur. A fresh dose of specific microbes attracts phagocytes already habituated to the products of the same kind of microbes, which take up the microbes themselves before they can elaborate any effective toxic material.

The critical struggle is therefore at the commencement of the disease; for, if the leucocytes cannot accomplish this at the beginning, later interference would be ineffective, because enough poison would have been produced to paralyze them. Hence, any condition that prevents access of the leucocytes facilitates infection. On the other hand, in such diseases as relapsing fever, where crises occurred, the cells destroyed the sporilla in monkeys and there was no second attack; but in man the phagocytes were unable to completely overcome it and a new attack supervened.

And in tubercle and leprosy, where the bacilli actually live within the leucocytes and finally destroy it, it would appear that the power of the cell is limited to swallowing or inclosing the foreign body without digesting it. On the contrary, it is held by some that the prophylactic substances reside in the animal tissue juices. These bacteria-killing bodies are designated as defensive proteids, and is a theory that "immunity depends upon substances formed by the metabolism (tissue or nutritive changes) of the animal, rather than that of the microbe, and which are able to destroy either the microbe against which immunity is possessed, or the products upon which their pathogenic action depends."

This does not exclude other defences, and it is probable that in some animals immunity may depend upon other causes. In support of this it appears that the blood serum of a rabbit is a culture-medium for the bacillus pyogeneus (pus bacillus), but when a rabbit is made immune against the disease produced by this bacillus, its blood serum has acquired the power of attenuating or destroying the microbe. Similar results have been attained in other diseases, and, especially in pig typhoid, not only have the microbes been killed by the blood serum of immune rabbits, but such serum has destroyed the disease. It has also been found that the microbes of diphtheria and tetanus do not pass through the system, or migrate; they remain localized, and the deadly poison they elaborate, absorbed into the system, produces their disastrous effects. For instance, an inoculated guinea pig may develop diphtheretic paralysis long after the last diphtheretic bacillus has disappeared; and practically the same clinical effect can be produced by injecting a minute dose of the poison made by the diphtheretic microbe as by the microbe itself. Scarcely any tolerance can be obtained by successive inoculations with minute doses of the poison generated by the diphtheretic microbe, and there is no prospect of producing immunity in that way.

Further, it would be useless to attack the microbe if the poison already formed remained untouched. But it has been found that while the serum of a diphtheretic immune rabbit has no bactericidal action on the bacillus, it does destroy the poison produced by it, and in this way the disease has been cured in mice and guinea pigs. This has been confirmed in other diseases also. In determininig the nature of the substance upon which the bactericidal quality depends, it was suspected that it was a particular ferment-like proteid, known as cellglobulin B. In the serum of the rat an alkaline proteid having the power to destroy anthrax bacillus was found, and, when injected into mice along with fully virulent anthrax spores, it prevented their development. Other experiments showed that in the rat at least, these defensive proteids can be diminished or increased at pleasure by suitable diet, and that the blood serum may fairly be believed to contain this valuable constituent. In corroboration of this, it may be, as Emmerict reports, that dysentery and croupous pneumonia in animals could be cured or prevented by subcutaneous or intravenous injections of immune blood, and he believes that, as Franckel's diplococcus causes croupous pneumonia, so men can be cured of that disease, when proper quantities of chemically pure blood of artificially immune mice not only renders other mice refractory to tetanus, but cures the disease even after severe tetanic spasms have set in.

The defensive proteid or lexins, in which upon this theory these qualities reside, appear to be ferment-like albuminous bodies, which in the absence of other physiological tests, Mr. Hankin proposes to divide into two provisional classes—sozins, phylaxins. A sozin is a defensive proteid that occurs naturally in a normal animal. They have been found in all animals yet examined. A phylaxin (to guard) is a defensive proteid only found in an animal artificially made immune, and which, so far as known, only acts on one kind of microbe or its products. Each may be sub-divided into those that act on the microbe itself and those that act on the poison it generates, to be called myco (fungus) and toxo (poison) sozins and phylaxins.

As these may be also be obtained from cells, they do not exclude the phagocyte theory. Metchnikoff, of Paris, and Hankin, of Cambridge, are the respective exponents of the phagocyte and defensive proteid doctrines. It is probably the case, as Emmerict remarked, that no general theory of immunity can be formulated now. Phagocytosis can be demonstrated beyond a doubt under the microscope, and the experimental work with blood serum seems to show that other factors than the amœboid operates to induce protection. It is reasonable to suppose that both the cell and the serum play important parts and that the chemical element is not yet made out.

Belonging to this last factor are Klein and Coxwell's experiments on the influence of chloroform upon immunity. Frogs and rats are ordinarily immune against anthrax; but when inocculated with it under chloroform or ether, both of these invariably die, although, so far as the microscope shows, the leucocytes continue to swallow the bacteria. This seems to show that the chemical changes may be established in the blood sufficient to neutralize the destructive power of the leucocytes.

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The bicyclist resembles Ixion of old in the fact that he discovers such a display of backbone.

THE GARRISON OF THE HUMAN BODY.

Among the topics discussed by Prince Krapotkin in an article on recent science contributed to the *Nineteenth Century*, there is one of extraordinary interest, namely, the incessant conflict going on between the micro-organisms that invade and those which defend the living body. Of all the discoveries made of late years by biologists, none is more striking than the demonstration that almost all infectious diseases may be traced to foreign bacilli, whose intrusion is resisted by a militia of resident micro-organisms known under the general name of leucocytes, the function of which is to attack, swallow, digest, neutralize, or expel the alien and noxious microbes. The outcome of this ceaseless struggle within the body is on the one hand health and life, and on the other disease and dissolution.

So far, we know more about our assailants than our defenders. Bacteriology, the branch of science which deals with the germ theory of disease, may have said to have been founded about the end of the fifties by Pasteur's researches into the fermentation of beer and wine and Virchow's investigations into cellular pathology. Since then, although some alleged discoveries have been confuted, many have been verified, and we indisputably know a great number of micro-organisms which are capable, under certain circumstances, of producing certain specific maladies. For example, cholera, typhoid fever, and gastric affections generally; malaria and influenza; tuberculosis, leprosy, and cancer; diphtheria, measles and scarlet fever; rheumatism, smallpox, rabies and tetanus have been traced to separate microscopical beings. The photograph of each separate bacillus may be found in the text books; its modes of life, and very often its methods of reproduction, have been carefully studied, both in the animal body and in artificial cultures; subjected also to minute scrutiny have been the morbid effects which it produces when introduced into the bodies of various animals. In a word, the germ origin of infectious diseases can no longer be described as a theory; it is a fact.

Relatively backward is our knowledge of the means of combating infectious micro-organisms. Most of the specifics which once awakened hope have proved, in the long run, as ineffective against the bacilla themselves as the specifics proposed by physicians have proved against the resultant maladies. The more the study of bacteria advances the stronger is the tendency to recognize that, as sanitary measures are the most effective precautions against the risks of infection, so a healthy body which is itself capable of checking the development of morbid micro-organisms is the best means of combating them. But what is it that permits a healthy body to resist invasion by morbid microbes? We know the invaders; but what is it that renders them highly noxious in some cases and quite inoffensive in some others? To this question cannot be given an answer which commands the universal assent of biologists. The broadest and most ingenious explanation of immunity thus far put forth is the theory elaborated in 1883 by Elie Menchikoff, which represents an extension of the leading principles of the struggle for life to the microscopic constituents of the animal body. There exist in the body of man, and of all vertebrates, besides the cells which constitute the animal tissues, a number of free cells, the white corpuscles of blood and lymph, and the so-called wandering cells of the tissues. Four different varieties of these free cells, collectively known as *leucocytes*, have been described, the distinctions between them being chiefly based upon the shape and the numbers of their nuclei. It appears that the leucocytes of both the higher and lower animals have all the distinctive features of simple amœbæ. They protrude pseudopodia or feelers, and they move about, and, like amœbæ, they are endowed to a high degree with the capacity of ingesting all kinds of small granules which they find in their way, including various smaller micro-organisms. In some cases the bacilli thus ingested are *digested*—that is, transformed into a soluble matter, which is assimilated by the protoplasm of the leucocytes.

In other cases the bacteria are for some time kept alive within the leucocytes, and if the latter are placed in conditions unfavorable for themselves but favorable for the invading microbes, the invaders develop and are set free. In still other cases the leucocytes contribute to the defense of the body by driving the hostile bacteria out of the organism through the skin. Transpiration is a familiar instance of the last-named process. Investigation has also demonstrated that the efficiency of the leucocytes varies greatly in different members of the same species of animal, their vigor being proportionate to the general health of the body. If the leucocytes are vigorous, they prevent the germination of the spores which they had ingested; but they maintain this power at a maximum only so long as they are healthy. If an animal has been submitted to cold, or has been narcotized, it loses its immunity from infectious maladies.

Such are the facts, and it seems reasonable to explain them, as does Menchikoff, on the theory that the leucocytes are the defensive agencies against infectious disease with which the animal bodies have been endowed by nature. The necessities of the struggle for existence have evolved in living organisms the capacity of self-protection by dispatching armies of leucocytes to the spots attacked by noxious microbes. The struggle, as we have said, may end in either the rout of the leucocytes, in which case disease ensues, or in the repulse of the microbes, which is followed by recovery. Or, again, the outcome may be in a drawn battle, which represents the state of things in various chronic diseases.—*New York Sun.*

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DEATH.

BY P. CHALMERS MITCHELL.

This makes no pretension of being an elaborately thought-out essay on "Death." It is the result of an attempt to clear up my own ideas on a subject which, when vitalistic conceptions are spreading so rapidly among biologists, seems to be a last outpost of the other school, and yet an outpost which may be the center of its victory.

I propose to offer no historical introduction; for just as nothing so entirely unfits one to understand current political problems as what is called the study of history, so, however interesting to the curious, the past history of any scientific controversy is the most misleading of all guides to its subsequent development.

In biology, as in morals, simplicity of term invariably covers confusion of idea. The apparent opposites, life and death, like the apparent opposites, right and wrong, extend as a vast tangle of intermeshing ideas. As out of a naive acceptance of right and wrong as simple ideas come the cruel follies of the conscientious, so out of a naive acceptance of the simple words life and death as corresponding to simple facts comes the grotesque abstraction—vitalism.

There are three ways in which an organism may come to an end. By some gross accident, as when one cleans an amœba off a slide with a duster, or one's self trifles with nitro-glycerine, an organism may be swept out of existence. Or, and specially in the case of the higher organisms, some alteration in the machinery, some slight defect in the mechanism, may interfere fatally with the whole. Or, lastly, the wrought iron itself may slowly oxidize, or by constant vibration become crystalline, the cells and protoplasm of the living organism may decay. Of course, the divisions of this classification, like those of all classifications that do not deal with beans or buttons, or the subject matter of metaphysics, are not mutually exclusive. They represent only the point of view for the moment convenient to the classifier.

With the first mode of death, though it probably enormously preponderates in the animal world—so enormously as to make it doubtful whether natural selection can have anything to do with fixing the term of natural life—we have at present little to do. The individual life has been destroyed by a mechanical force. The potential energy of the organism provides food for luckier organisms, and sooner or later passes from the world as heat. But in the large organism, as in the small, what has taken place is mechanical interruption of a complicated process, resulting ultimately in chemical death—the running off of the potential energy.

The leading idea in this paper is to find in the various phenomena grouped under the term death, never the opposition of a kindred mysterious force to the mysterious vitalism, but the action of known mechanical or chemical agencies, and to suggest the inference that the life of the organism or of the cell, coming to an end as it does by known agencies, cannot itself depend in essence on any transcendental force; that, in fact, as the negative conditions of life are purely chemical and physical, life itself, however complicated, must be a congeries of phenomena ultimately to be resolved into purely chemical and physical forces.

When we consider the higher animals, we find that death is always more or less violent. As Michael Foster says: "The central factor of life is the circulation of the blood, and the blood is not only useless but injurious, unless it be duly oxygenated, and in the higher animals the oxygenation of the blood can be duly effected by means of the respiratory muscular mechanism presided over by the respiratory center in the bulb. Thus, the life of a complex animal is, when reduced to a simple form, composed of three factors—the maintenance of the circulation, the access of air to the hæmoglobin of the blood, and the functional activity of the respiratory center; and death may come from the arrest of any one of these three. As it has been put, death may begin at the heart, or the lungs, or the brain."

It requires little medical knowledge to refer the final symptoms of any fatal disease to one of these—the three gates of death of the older writers. Turning over a few of them, one finds the proximate causes of death to group themselves simply.

Death through the heart may come by inhibition, as when a blow on the abdomen or iced milk on the stomach stimulates the peripheral ends of the vagus. Or it may come by cardiac failure, as in fatty degeneration, or in valvular diseases.

Death through the lungs may come as asphyxia from lung diseases, from capillary bronchitis, or from pneumonia. Or asphyxia may result from anæmia caused by loss of blood from hæmorrhage, or want of hæmoglobin. Or the respiratory nerves may be paralyzed, as in diphtheria or bulbar paralysis.

And, lastly, death through the brain may come in a multitude of ways. Centers may be suddenly destroyed by wounds, or by the culmination of tumors, or they may be paralyzed by high temperature, or by a multitude of organic poisons arising from organic diseases, like Bright's, or produced by parasitic bacteria.

Even in death from old age we find the dark mother throwing open one of the three gates. The frame of a higher animal does not, like the Autocrat's one horse shay, slowly and equally decay until there is a simultaneous collapse of everything—until each cell is senile and moribund—but the heart or the lungs or some center in the brain suddenly gives way. But here, perhaps, more plainly than in other cases, we see that the violence or suddenness of death, on which so much stress has been laid, is the merest accident, due to the complexity of the organism. There has been going on for long a gradual degeneration of the walls of the blood vessels—a degeneration showing itself by an accumulation of fat or of lime, products usually oxidized or excreted—and this slow cellular change has, by weakening the circulation, acted on all the organs of the body, and reacted on itself until some point is reached at which the gross mechanism breaks down. So in the cases of most causes of death, we can trace back the chain of events until we find that what is said to cause death is only an accidentally last term in a long series of protoplasmic changes; changes, as in lung diseases, where the lung cells have been gradually decaying, or, as in Bright's disease, where kidney cells have been failing to do their work.

In short, protoplasmic changes have been going on, and when the results of these have sufficiently accumulated, the gross mechanism is suddenly arrested; or, more directly, an interference may result when some natural mechanism is accidentally over-stimulated, as when reflex stimulation of the vagus stops the heart, or when a lethal alternating current is switched through the spinal cord; or, again, a poison may paralyze a brain center, and so the heart or the lungs be stopped.

It is clear that in all these cases—the modes of death treated of in the medical books—a confusion of ideas exists. The source of this confusion is clearly seen when one finds, for instance, Foster suggesting that the point of death cannot be determined, as it depends on the skill of the experimenter endeavoring to resuscitate a flickering vitality; or Weismann and Gotte gravely discussing whether there can be death without a corpse, and whether death is a subtile attribute of the metazoa teleogically built up by natural selection into its present form. We have to distinguish between protoplasmic death and the stoppage of a complicated organism.

We know with absolute certainty that whatever be the details of the processes going on in a living cell, the sum of the activity is the acquisition of potential energy either indirectly by the transformation of kinetic energy, as in green plants, or directly by the absorption of chemical compounds possessing high heat equivalents—I mean compounds which, if oxidized in a calorimeter, melt relatively high quantities of ice; the change of these chemical compounds into substances that can melt relatively smaller amounts of ice. The difference of heat equivalent represents the work done by the cell and the waste in doing the work. Protoplasmic death is an arrest of this process, an arrest causing in the first place a diminution or cessation of absorption of fresh food—of more potential; and in the second, an increase in the heat waste and consequent lowering in the heat equivalents of the discharged products. This lowering may be rapid, as where the cell tissues are rapidly oxidized in the air, or it may be a slow process, gradually going on in the bodies of animals or tissues of plants. But the essence of protoplasmic death is that the self-feeding gear is disarranged, that the cell either stops taking up more food, or that it uses its food more quickly than it can take it, and so burns itself away.

In a complicated aggregate of cells, protoplasmic death of any one of them must necessarily be reflected on the others in some mechanical way, the simplicity of the path depending on the simplicity of the cell aggregate. The suddenness or violence of the interference will similarly depend on the degree of complexity of the cell aggregate. In an organism like man the arrest of the cell activity of the respiratory center causes what is called sudden death of the entire organism. But obviously the suddenness, as the death itself, depends on the correlations between the organs—correlations of clearly mechanical nature; and the death of the entire organism—protoplasmic death of all the cells—comes only gradually, as the destructive changes set going creep along the mechanical channels. There is, of course, absolutely no reason why the skin of a man killed by chloroform or gunshot should not succeed as a graft quite as well as the skin from a living man, provided it were taken before the ripples of nutritive and other disturbance had spread to it. The tissues die slowly, and the time of death varies as the mechanical relations.

It is clear, then, that death of the organism, the death of the medical books and the popular imagination, is a function, not of the organism, but of the complexity of the organism. It forms a mechanical middle term between protoplasmic death of some of the tissues and protoplasmic death of all the tissues. We may distinguish this as somatic death.

Running down the animal kingdom from the more integrated to the less integrated, we find somatic death gradually fading away till, in the protozoa, there is no distinction between somatic death and protoplasmic death. A shock that is fatal to civilized man is not infrequently borne with comparative ease by savage man, and might have little effect even on one of the higher mammalia. Brain operations and accidents instantly fatal to man can be survived for many days by pigeons, and the removal of great parts has little effect on the life of an amphibian.

Precisely the same condition of things can be inferred if we study the results of artificial section, or the conditions of natural budding. Bisection surely would kill all the higher animals In its natural form it becomes an increasingly common form of reproduction, as we descend the animal scale. Moreover, in the embryonic stages of the higher animals—in those stages where integration is less complete—fission as an internal or as an external accident produces, not death, but double monsters or identical twins. So, also, if there be considered the suddenness of somatic death. The heart of a higher animal stops suddenly, and this accidental moment is named the moment of death. But the heart of a tortoise that has been in a dissecting dish for two or three days begins to beat as the knife reaches it. The watchers by the deathbed of a fish or a mollusk would continue to watch until putrefaction was obvious. I have fed a semi-putrid anemone with pieces of mackerel, and have seen a starfish with the tips of its arms rotten and pulpy crawl gayly about and evert its stomach on a pecten. In both of these cases the animals were moribund, and soon afterward actually died. It is a commonplace observation how rapidly the lower animals putrefy, and how necessary, to secure their histological preservation, it is to kill them as soon as possible after capture.

All this merely means that, in the first place, the stages of death creep over their simple framework so quietly that they are decaying before we know that they are dead; and, in the second, that protoplasmic death is more nearly identical with somatic.

Finally, in the descending scale, we reach unintegrated colonies of cells or single cells. Here there is identity between the protoplasmic individual and the soma; there is no somatic mechanism to break down, no chain along which protoplasmic death can creep from one cell to another.

It is clear, then, that somatic death is an attribute of the metazoa, a merely necessary result of their complexity of organization, and that somatic death becomes a more and more striking occurrence as the metazoan becomes higher and more complex. It is hardly necessary to point out that a line of argument precisely similar applies to somatic life, and that what are usually meant by life and death are merely somatic life and death, the merest mechanical results of complex mechanism.

It is true that the protozoa are untouched by somatic death, that it has and can have absolutely no place in their life cycle; that were somatic death the only death in the world, protozoa would be not potentially, but actually, immortal. It is equally true that no metazoan, however lucky, is at all likely to escape somatic death, is at all likely to be immortal. Even in the simplest metazoan, the life of the soma is bound up with the life of the units—or, at least, with the life of groups of the units—and the chances of protoplasmic death of any cell, or group of cells, being followed by somatic death, continually increases with the complexity of the organism, and increases in geomotrical ratio as the number of component parts liable to accidental or intrinsic break-down.

The protozoa, then, and chains of single cell life, like the unicellular chain of germ cell life of which the metazoa are the carriers, may be called potentially immortal, and the metazoa mortal. But all this merely deals with somatic death, and is, so to speak, a biological accident. And so discussion or argument dealing with the possibility of immortal protozoa giving rise to mortal metazoa by, for instance, some unequal fission separating a hypothetically mortal part of the plasma from a hypothetically immortal—is futile.

There is left, then, protoplasmic death. It is certain that protoplasmic death is not a necessary concomitant of protoplasmic life. We know of no means to secure the set of conditions which we call life, without the presence of some small piece of living material; we have good reason to suppose that spontaneous generation does not occur, at least as a normal factor in the organic world; we know with absolute certainty that it never occurs in metazoa. From this it follows that a direct continuous chain of cell life binds all animals with at least unicellular animals; that, for instance, we ourselves are at the end of a simple chain of cell division stretching through an inconceivable number of generations to an inconceivably remote past. So far as experience goes we can certainly say that living matter does not necessarily carry within itself the seeds of death. On the other hand, we can with equal certainty say that death apparently comes sooner or later to all chains of life; though it may be only that in chains of life, as in single lives, old age brings with it increased chances of death. Thus, if we review the procession of animal life in the past history of the earth, we find that always they are the topmost branches that wither; that sets of animals highest in the scale at any geological period are constantly dying out and being replaced, not by their own descendants, but by the descendants of a younger and fresher stock. I take it that this does not necessarily imply the otherwise improbable conception that death is a necessary incident in life. Just as the older a weapon or an ornament is, invariably it is the more battered or rusted, because, however jealously guarded, increase of years means increase in number of chances of exposure to accident; so, however nicely adjusted to environment, however constitutionally plastic and ready for adaptation to change, lapse of years must almost necessarily bring the one set of unsuitable conditions, the finally fatal moulding of the plastic constitution of an organic stock.

Exposure to accidents and somatic death are sufficient causes of death in the metazoa. It is not necessary to suppose that their cell protoplasm differs from the cell protoplasm of protozoa in having a limited duration of life.

Now let us turn to the two cases of practical immortality to see whether there be any special conditions.

First for the protozoa. It has been too easily assumed that in their case death follows from the gross accidents of life. The protozoa of the crag, or of the chalk, or of older beds, are not identical with living forms. In these beds, as in the ooze of existing seas, the invariable presence of large numbers of uninjured shells seems to point to protoplasmic death as having at least a possible place in protozoa. But existing protozoa as other existing animals are the direct descendants of the protozoa of long ago. They have established a weighty claim to be considered conditionally immortal. They enjoy two special advantages. By living singly they stand or fall by their own luck; they are not tied to the accidents of other cells in a cell commonwealth. Their easier contact with external media, and readier means of getting rid of waste products, or of accidentally taken dangerous substances, make them less subject to the intrinsic accidents associated with cell life.

Germ cells, again, unlike the working cells of the body, lie comparatively dormant within the tissues until the time comes for the playing of their own parts. Practically, all the ova a woman produces are already formed in the new-born babe. They lie in the ovary, secluded from the wear and tear of cell life, subject to few dangers, and as far from the vicissitudes of somatic life as possible. And, lastly, the invariable extrusion of at least one polar body from every ovum is a mysterious and unique condition; a condition which may be a special effort to remove from the cells by-products the slow accumulation of which in tissue cells ultimately causes disease or disturbance.

We know that all other cells do ultimately die, and that death of all kinds can be reduced to cell death. The meaning of cell death and the meaning of cell life will be discovered together. But already we know something of the processes going on in living cells. In the first place there is decomposition. We cannot trace all the details, but we know that a number of substances are taken in, so to speak, at one end, and that a number emerge at the other. It is futile to say that the processes are not the processes of chemistry, as we do not know the constitutional formulæ of many of the substances which enter or emerge. But the sum of the activity is a slow feeding of substances of a high potential; a complicated flux of these within the cell; and an emergence of substances of a lower potential. Clearly, there are a large number of ways in which such a process can be disarranged. A sudden stimulus may set off the liberation of energy so rapidly that there is none left to do the work of bringing in more food, and starting the chemical reactions. Some waste substance produced accidentally or usually in small quantities, and not regularly excreted, may slowly accumulate until it clogs the whole action. Even in inorganic chemistry, reactions are often apparently so capricious that we know they must be influenced by a multitude of apparently trifling conditions. Lastly, the introduction of some unwonted substance may arrest or supplant the normal reactions.

For the elucidation of all these, there is wanted much experimental organic chemistry. Above all, there is wanted a careful comparison of the constitution with the effects of the different poisons which act on protoplasm. This is already leading toward a knowledge of the actual occurrences in a living cell, and it will, no doubt, get more and more clear that the events which cause protoplasmic death are simple interferences with the cell economy arising from internal or external accidents. As in bacteriology the idea that the fatal influence of these parasitic organisms is due to a struggle between life and life has been displaced by the idea that it is due to the direct action of a poison accidentally discharged by the parasites, so the causes of protoplasmic death will be attributed less and less to any inherent mortality in protoplasm. There seems no good evidence that protoplasm in suitable conditions, with sufficient food, should ever die, just as there is no reason that a flame, with a constant supply of fuel, and removed from violent draughts, should not burn from the beginning of time to the end of time. But the more complex flame of life is disturbed by many agencies, and these agencies cause protoplasmic death. In the metazoa, where each cell may suffer by the accidents of every cell, a new danger, the danger which is here called somatic death, is so urgent as to be fate rather than accident.—*Natural Science.*

HOUSEHOLD.

TESTED RECEIPTS.

Every receipt here given is original, has been practically tested by the AMERICAN ANALYST and is therefore confidently recommended.

SCALLOPED CHICKEN.—Cold roast or boiled chicken. Rid the chicken of gristle and skin, and cut into pieces half an inch long. Have ready the gravy, or some rich drawn butter, in a saucepan on the fire. Thicken it well, and stir in the chicken, boil up once, take it off, and add a well-beaten egg. Cover the bottom of a dish with fine bread crumbs. Pour in the mixture, and put another thick layer of crumbs on top, stirring bits of butter all over it. Bake to a delicate brown in a quick oven. Instead of the gravy make a white sauce as follows: Heat a cup of cream to a boil, stir in one tablespoonful of corn starch, wet in cold milk, stir until it thickens; then add two tablespoonfuls of butter, a beaten egg, pepper, salt, and chopped parsley. Take from the fire and add the chicken.

RAGOUT OF CALF'S HEAD.—Half of a cold boiled calf's head. Cut the meat evenly into slices of uniform size. Heat a cup of gravy to a boil, with a teaspoonful of sweet herbs chopped fine, pepper, salt, and a very little minced onion. Put in the meat, simmer, closely covered, for fifteen minutes; add four hard-boiled eggs, sliced, a glass of brown sherry, and a dozen forcemeat balls made of minced veal with bread crumbs and bound with beaten egg; then rolled in flour. Thicken with warmed flour before the wine and balls are added. Let all become smoking hot; take up the meat; pile on a hot dish, lay the eggs on it, the forcemeat balls at the base. Pour the gravy over and serve.

APPLE AND BATTER PUDDING.—Pare and core six apples and put them in a buttered pudding dish. Pour the following batter over them: A pint of milk, two eggs beaten light, a quarter of a teaspoonful of soda dissolved in hot water, half a teaspoonful of cream tartar sifted in the flour, a pinch of salt, flour enough for a thin batter, a dessert spoonful of butter rubbed in the flour. Bake three-quarters of an hour; serve with hard sauce.

THIN, RICH, COOKIES.—One cup butter, one cup sugar three eggs, all beaten together to a cream; use just enough flour to mix and roll thin.

COCOANUT COOKIES.—One cup butter, two cups sugar, two eggs, one cup grated cocoanut, two teaspoonfuls baking powder; flour enough to roll. Roll very thin; bake quickly, but do not brown.

MEDICAL.

A NEGLECTED DEPARTMENT OF MEDICINE.

FOOD AND ASSIMILATION.

BY C. C. FITE, M. D.

If the wraiths of all the infants who have died from improper feeding were to float over the sun the obstruction of light would be so great that we would not only have a total eclipse, but hours be consumed in the passage of the shadow.

If the mediums were to call together the spirits of all the consumptives who became victims from inefficient feeding, there would be such a gathering as would make the greatest armies of the world appear as a mere handful of men.

Now that the medical mind has reached the point in development to realize that specific medication is a snare, that symptomatic treatment is a delusion, that we know after all little of therapeutics, but must study the ground work of economy, physiology, and tissue metamorphosis, we can with some degree of confidence expect a progress in the future that will lead to something positive and scientific in internal medicine and an approach to the definiteness and success already reached in surgery.

The varieties of theories in regard to the feeding of infants deprived of breast milk, is something appalling to contemplate. At a recent medical debate, where men of experience and reputation were discussing this question, one stated that raw cow's milk was all-sufficient; another said that sterilized milk was the thing; another was enthusiastic over Pasteurized milk; another of food prepared by the Blank Company; still another of the other kind, and so on to a stupefying degree of confusion and skepticism, but each condemned the theories of the others. His was the only correct and reliable plan; and each admitted that his theory had undergone a change in recent years.

Wherein therefore lies the truth? In that the problem is as unsettled as ever, and that a certain number of children live in spite of errors; but we must also bear in mind the thousands who go to their long home before the journey of life is fairly begun.

Surely there is a "right and best way." It is not yet discovered perhaps, and when it is found it will not be from misleading clinical and symptomatic studies, but from scientific investigations made on the human stomach by chemical analyses of the foods after they have been ingested, digested and then recovered and analyzed.

Studies of this kind will enable us to understand the physiology of digestion, which is yet to most physicians an unknown field, and to the chemist and the physiologist a stumbling block. Old-time notions must be promptly abandoned if any truth is to be found. The hoary headed theory that pancreatic and salivary secretions are not established until about the sixth month, is now known to be false; in some infants the secretions are demonstrable by the sixth or eighth week, if not earlier; not to a marked degree, of course, but sufficient to explain how it was possible for so many infants to have lived and thrived on starchy foods in spite of the trite lecture-room dictum: "It is not possible for young infants to digest starch."

The discovery of the germ which causes tuberculosis has for a time interfered with a due appreciation that a seed will not take root on a soil unfavorable to its development. If the individual is robust, has a normal supply of good rich blood, the germ is cast off; but if there is a condition of debility and anæmia the germ takes hold and develops, then the patient has consumption. There is no proposition so evident as this; no fact in medicine is so well fixed and established beyond controversy; and yet do medical men ever stop to think of it? The primary point at which tuberculosis is to be fought is in the digestive tract, not in the lungs, and it is not so much in the stomach as in the duodenum—a person who has a digestive apparatus which can assimilate fats and convert starch into sugar, will be fat and well and impervious to the insidious tuberculous germ. To get to the point, flatulent dyspepsia or duodenal indigestion, is the fixed and certain origin of phthisis; even if the immediate causes, a cold and exposure to contagion, have the credit of it and of course render it a fact. Therefore, in incipient consumption, do not give the patient up, or resort to routine treatment, but bend every energy to relieving the faulty assimilation of fatty and starchy foods. Do not give tonics and alcoholics blindly, but prescribe a diet and medical formulary which will relieve the indigestion and fill the tissues of the body with a strong volume of rich blood. In giving directions in regard to exercise and rest, bathing, food, climate and medicine, bear in mind that naught will avail unless tissue metamorphosis is promoted and the wastes of the body supplemented and reinforced. All treatment that secures any permanent good for the patient must come in this way, and any other is a snare and only postpones the evil day for a season.

One of the theories in the profession is, that pancreatic extracts are useless when taken into the stomach, because the ferments therein contained are destroyed by the acid stomach secretions. The truth is, that pancreatic extracts if taken at meal time, have from thirty to forty-five minutes to act before the acidity of the stomach's contents has reached the degree of acidity—one-tenth of one per cent—which renders them inefficient. A degree of acidity below that given does not interfere with their action.

One of the easiest and most available methods of promoting intestinal digestion, is by administering Malti. This preparation contains enough diastase to digest thirty times its weight of starch and it acts in a neutral or acid medium, and hence from the moment it is ingested to the completion of the process in the stomach, the starches are being acted on and converted into maltose and dextrine, and thereby prepared for absorption from the intestinal tract. The more complete the conversion of the starch by the salivary ferments and diastase, the less work there is to be done in the duodenum and this intestinal indigestion is prevented.

One great difficulty in giving cod liver oil in these cases is due to the fact that it is apt to cause congestion of the liver, due to giving more of the oil than the economy can utilize; another and the most evident, is its tendency to cause indigestion and eructations. This is caused by giving it in the wrong way. It should be so prepared that the vehicle containing it should be a digestive agent and hence the advisability of giving the oil in combination with the diastasic preparation above named.

If there is one thing in medicine which is surely known to those who have studied the question, it it is that intestinal indigestion, or its sequel, duodenal catarrh, is the almost constant cause of urticaria and often eczema, and yet I personally know men eminent as dermatologists who do not recognize, or at least do not prescribe, for this condition when treating such cases.

It is unnecessary to go into further details on this subject; enough has been said to illustrate that the important study of foods, digestion and assimilation is a neglected branch of medicine. During the last few years I have had some unusual opportunities of experimenting, with foods and digestive agents, and of observing results obtained from feeding persons with foods, with and without digestive ferments being added, with subsequent stomach pumpings and chemical analyses, and I am overwhelmed with astonishment at how little is really known about the questions herein discussed.

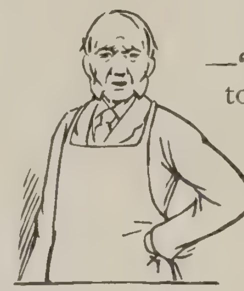
My purpose in writing this paper is to urge the practicing physician to give more attention to this absorbingly interesting subject, and to cultivate a sufficient degree of agnosticism to take the theories now prevalent tentatively, and be ready to at least investigate what is being done by the practical chemist, for it is only in this way, by practical studies, that anything can be arrived at which will be of permanent value.—*Exchange.*

REMOVAL OF MOLES.

In a recent number of the *Practitioner*, Dr. Jamison writes on the use of sodium ethylate in removing hairy moles on the face. He operated in this way: The hairs were cut off as closely as possible with a very fine pair of scissors, and the mole was then painted over with sodium ethylate, a fine glass rod being used. When the mole had a varnished look the ethylate was gently rubbed in with the glass rod, to make it penetrate more deeply into the hair follicles. The mole had quite a black look when the operation was over. A hard crust formed over it, which was nearly three weeks in becoming detached. When it came off the hairs were seen to be destroyed, and the surface of the mole had a smooth, somewhat cicatrical appearance, of a much lighter color than before, and this favorable condition continued until the mark was scarcely noticeable.—*Herald of Health.*

LOOKING FORWARD.

One of the cherished dreams of modern science is the discovery of an artificial food, so concentrated that one may take all the nourishment of a hearty dinner in the convenient form of a single bolus of moderate size, or perhaps even a very little pill. Then, as nature always eliminates useless organs, the man of the future will lose the sense of taste; he will have no teeth, for he will not need to chew anything; his stomach will shrink, possibly to the dimensions of an ounce phial; he will have no bowels, for from his concentrated food there will be no waste. It is a fantastic concept, but that which is very real is a clearly discernible tendency among our food purveyors to reach out after that ideal food. All sorts of concentrated articles of food and drink are now offered in the delicatessen shops and first class grocers, and consumers are taking very kindly to them. Possibly they may suit us very well after we get used to them, for nature is very kind in adapting herself to the new requirements we put upon her, but we will have to undergo some structural changes before we can be as perfectly and healthfully nourished by that sort of food as by the cruder forms to which we have been accustomed. As we are, we need a certain proportion of what old-fashioned folks call "roughness." Our health is not so good when we eat altogether bread made of "superfine" white flour, from which the last molecule of bran has been extracted, and a rich diet of heavy meats served with strong "concentrated" sauces does not agree with us so well as would a plainer and simpler one. Nevertheless, it is the fashion to eat things from cans, and jars, and bottles, and packages—one ounce equal to a pound of the crude material—and if we hope to live through getting used to them we must take extra good care of our digestion. Good digestion is the first essential to physical well being. "The blood is the life"—we are told. So it is, but how are you going to have blood fit to sustain life if you allow your digestive organs to get out of order? It is simply impossible. No organs, not even the heart, is more important than the liver. You may live a little longer if your liver stops working, than if your heart stops, but continued stoppage is as certainly fatal in one case as in the other. When your rich or "concentrated" food, over eating, sedentary habits, or other causes interrupt the energetic and constant action of the liver, nature warns you very quickly that serious trouble has commenced and if you are wise you will heed the warning. If you do not, the bile instead of following its natural course, stimulating the bowels and supplying the special nutriment for the brain will be thrown back into the stomach, the assimilative functions will be perverted and a mass of impurities be carried by the blood current throughout the system. The kidneys, called upon for double service, quickly become diseased, for they are very delicate organs, and the bowels grow torpid closing the main avenue of excretion. These are conditions which if neglected may rapidly become fatal. There is good sound sense in the old injunction, "Keep the head cool, the feet warm and the bowels open," and the most important thing is the last. And remember that simply opening them is not enough. Any violent purgative or even a dysentery will do that. What you require for health is to stimulate and strengthen the liver and kidneys in order that the bowels may work naturally. To effect that there is no medicine equal in value to Ayer's Compound Cathartic Pills. They are purely vegetable and always thoroughly reliable.



What one Grocer says:

—"I hire clerks who can sell the goods that I tell them to sell—and of course I tell them to sell the goods on which I make the most money. If they can't do it, I won't have them. That's what I hire them for." This is an actual fact related by a grocer to our salesman—and it's a common fact; we have it daily. So, you see, when they tell you that some worthless or dangerous washing-powder is "the same as" or "as good as" **Pearline**, that's because it pays a larger profit. **Too** large, altogether, if clerks can be hired on purpose to make people take things they don't want and know nothing of, instead of a tried and proved article like **Pearline.** If your grocer sends you what you do not order, **be honest**—send it back.

Beware Peddlers and some unscrupulous grocers will tell you "this is as good as" or "the same as Pearline." IT'S FALSE—Pearline is never peddled, if your grocer sends you an imitation, be honest—*send it back.*

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JAMES PYLE, New York.

Indigestion

Horsford's Acid Phosphate

Is the most effective and agreeable remedy in existence for preventing indigestion, and relieving those diseases arising from a disordered stomach.

Dr. W. W. Gardner, Springfield, Mass., says: "I value it as an excellent preventative of indigestion, and a pleasant ascidulated drink when properly diluted with water and sweetened."

Descriptive Pamphlet free.

Rumford Chemical Works, Providence, R. I.

Beware of Substitutes and Imitations.

For Sale by all Druggists.

A SENSIBLE DIAGNOSIS.

Mrs. O'Phlyn—"An phwat did th' docther say t' yez?"

Mr. O'Phlyn—"Shure, Nora, Oi hov a sloight tech o' nomonie."

Mrs. O'Phlyn—"A sloight tech, is it? Divil a thing he knows about it, Oi kin tell yez. Yez hov no money at all, at all."—*Judge.*

A servant who did not find her way very promptly to the kitchen one morning was visited by her mistress, who found her in bed, suffering from pain and violent sickness. She explained that she had a cold, and had taken some medicine which had been recommended for the children.

"How much did you take?" asked the mistress.

"Well, mum, I went by the directions on the bottle. It said, 'Ten drops for an infant, thirty drops for an adult, and a tablespoonful for an emetic.' I knew I wasn't an infant or adult, so I thought I must be an emetic; and the pesky stuff has pretty nigh turned me inside out."—*Reflector.*

Minister—Tommy, what is happiness?

Tommy (promptly)—It's when you're eatin'.—*Truth.*

CATARRH CANNOT BE CURED

With LOCAL APPLICATIONS, as they cannot reach the seat of the disease. Catarrh is a blood or constitutional disease, and in order to cure it you must take internal remedies. Hall's Catarrh Cure is taken internally, and acts directly on the blood and mucous surfaces. Hall's Catarrh Cure is not a quack medicine. It was prescribed by one of the best physicians in this country for years, and is a regular prescription. It is composed of the best tonics known, combined with the best blood purifiers, acting directly on the mucous surfaces. The perfect combination of the two ingredients is what produces such wonderful results in curing Catarrh. Send for testimonials, free.

F. J. CHENEY & CO., Props., Toledo, O.

Sold by druggists, price 75c.

OCULAR APPEARANCES.

The eyes are congested in variola, scarlet fever, rubeola, yellow-fever, typhus fever, meningitis.

They are projecting in asphyxia, hydrocephalus, hydrophobia, exophthalmic goitre and sometimes in functional heart disease.

They are sunken in collapse, cholera and hectic.

They are starting in convulsions, apoplexy, catalepsy, meningitis and dementia.

They are rolling in epilepsy and tuberculous meningitis.

They are photophobic in hysteria, meningitis and cephalalgia.

The pupils are dilated in syncope, hysteria, collapse, asphyxia, epilepsy, drowning, uræmia, coma; generally in phthisis; poisoning by belladonna, atropia, fungi and many vegetable irritants and narcotics.

They are contracted in concussion, sunstroke, typhus fever, hemorrhage of the pons; in poisoning by opium, morphine, prussic acid, calabar bean, ergot of rye, and pilocarpine.

At first contracted and afterward dilated in compression of the brain, in poisoning by alcohol, ether and chloroform.

At first dilated and afterward contracted in severe apoplexy.

They are unequal in paralysis, compression of the brain and posterior spinal sclerosis.

They are frequently oscillating in epilepsy, typhus and spinal schlerosis.

In diseases of the eyes external signs facilitate diagnosis.

Congested in conjunctivitis, trachoma and ophthalmia.

Dilated in mydriasis, glaucoma and amaurosis.

Contracted im myosis, retinitis and iritis.

Photophobic in strumous ophthalmia, amaurosis, iritis, sclerotitis, choroiditis and retinitis.—*Times and Register.*

WORK OF CHEMISTS.

In an address on Founder's Day at Lafayette College, Professor Edward Hart delivered an excellent lecture on "What Chemistry Has Done for Us." In speaking of his discoveries made by chemists, among other things he said:

"In 1833, Prof. B. Silliman, Jr., made an investigation of the oil from a spring in Alleghany County, N. Y., and his report led to the formation of a company and the sinking of the first well. We see, then, that a chemist was responsible for the inception of this great industry. Chemists have been actively engaged, too, in its development, for before the oil could be burned it must be refined and the chemists have had to show how this could be done. Petroleum has been an almost unmixed blessing to mankind. It is the poor man's delight. From the paraffin (discovered by Redtenbacher) contained in it we make candles and oil the papers used for wrapping the toothsome caramel. The heavy oils are used for lubricating our cars. The miner burns a part of it in his lamp. The light portions are used for solvents of gums and greases, to extract oils from animal and vegetable refuse, and for many other uses too numerous to mention.

"Petroleum is one of our great staples—one of the principal sources of our wealth. The vexed question of its origin, which for many years has completely baffled geologists, has just been solved—and by a chemist.

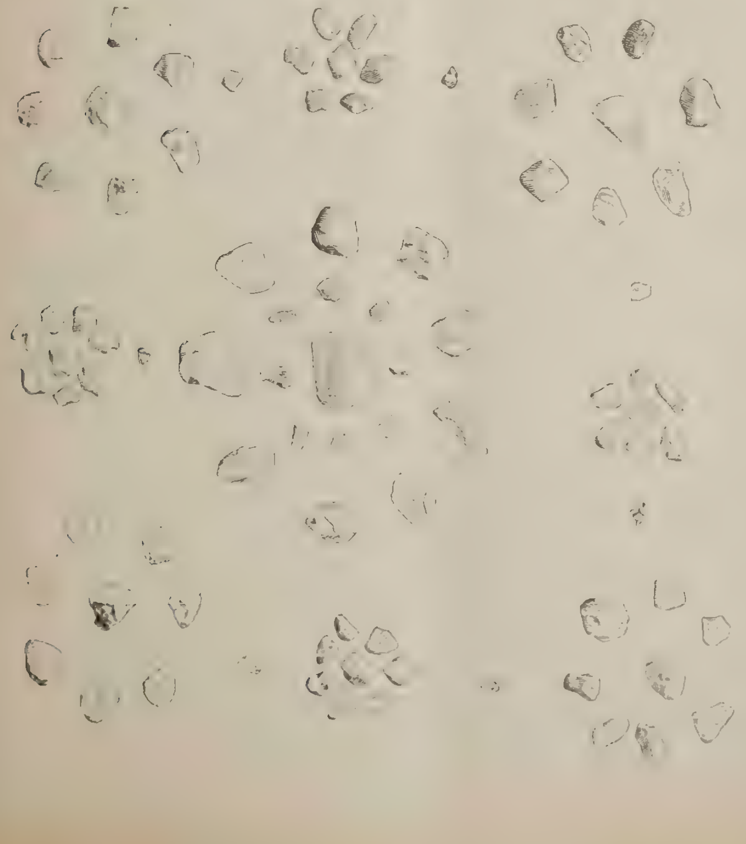
"In 1847, Gregory found in the grave of a hog, which had been buried for fourteen years, in a wet place, a quantity of wax-like material, which he found consisted of palmitic, stearic and oleic acids, and undoubtedly originated as an undecayable residue from the fat of the cadaver. The same substance had been noticed before this by Foureroy in the Cemetery of the Innocents at Paris. It seems undoubtedly true that when the bodies of animals decay in moist situations everything decays except the fat, which robbed of its glycerine, alone remains, forming the so-called adipocere. Professor Engler has recently discovered that when the substance is heated under pressure it is converted almost completely into petroleum, and that nearly all oils—fish oils included—could by this means be directly transformed into Pennsylvania crude, possessing all the characteristics, properties and impurities of the natural product. He exhibited samples of the article at Chicago this summer and burned a portion in a common kerosene lamp before the chemists there assembled. The conclusion is forced upon us, therefore, that petroleum is derived from animal remains which have decayed, leaving only the fats. These, covered up by deposits of mud, have been converted by heat into petroleum and natural gas, which has remained imprisoned all these years beneath the impervious rock, to be released at last for man's use by the stroke of the drill.

"Animal charcoal has been used for many years as a means of removing the color from sugar solutions. A German—Schneibler—now states that he has succeeded in refining sugar without the use of bone black. This, if substantiated, will be of direct practical value, for the use of the new method will be followed by a fall in the price of sugar, which, from an article of luxury has now grown into one of prime necessity—an important addition to our food supply. The sugar industry itself is a good illustration of how greatly the application of chemical knowledge can improve and cheapen established industrials that seemed almost perfect before. Careful analysis of all the crude material and careful chemical oversight of all the details of manufacture has resulted in recent years in very large savings in all directions, and a greater yield from the cane or beets employed. The result has been seen in the gradual but sure cheapening of the product and its improvement."

BUFFALO LITHIA WATER

A POWERFUL SOLVENT OF STONE IN THE BLADDER.

The following plate is from a photograph and represents the exact size and shape of Calculi passed by the Hon. T. J. Jarrett, ex-Mayor of Petersburg, Va., under the action of Buffalo Lithia Water.



The original stone shown in the cut together with one from a similar case, will be on exhibition at Ditman's Pharmacy, Astor House, Corner Broadway and Barclay Street, New York, from where water may be obtained.

Statement of Dr. John Herbert Claiborne, M. A., M. D., of Petersburg, Va., ex-Presiden and Honorary Fellow Medical Society of Virginia.

PETERSBURG, VA., Sept. 5, 1892.

E. C. LAIRD, Buffalo Lithia Sprnigs, Va.

My Dear Doctor:—I send by this mail a box of CALCULI, passed at various times within the last year by Hon. T. J. Jarrett, our former mayor, whilst drinking the BUFFALO LITHIA WATER. They give him but lttle pain now when passing. I have never critically examined the broken CALCULI, passed in such quantities from Mr. Jarrett's bladder, but am under the impression that the most of them were MANESIAN PHOSPHATES. There were specimens, however, which presented the appearance of OXYLATES, and, I remember, impressed me specially as being URIC ACID. I do not pretend to account for the mode of their solution by the Buffalo Lithia Water. There is nothing in its analysis which would warrant such results, but THE RESULTS ARE THERE, and seeing is believing. I can only suppose that in Nature's alembic there has been some subtle solvent evolved, too subtle to be caught by our coarse agents, which makes this wonderful disintegration. "There are many things in heaven and earth not dreamt of in our philosophy," and his is a short creed who believes only what he can prove or explain. Faithfully yours, JOHN HERBERT CLAIBORNE.

It is well known that stone in the bladder, for the most part Gout, Rheumatic Gout, Rheumatism, and also various forms of Dyspepsia and Nervous prostration have a common origin, viz.: excess of uric acid in the blood. It is evident, then, from the foregoing statement, that this water must possess extraordinary potency alike in all of these maladies. In Bright's Disease of the kidneys it is well-nigh specific.

Water in cases of one dozen half-gallon bottles, $5.00, f. o. b. here, and for sale by all first-class druggists.

Illustrated 32-page pamphlet, giving further information, sent prepaid on application to

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INVENTIONS, SCIENCE, ETC.

ON CHEMICAL DRY CLEANING.

Chemical dry cleaning constantly continues to be more extensively practiced in garment-dyeing and scouring establishments. This is by no means astonishing, since this method presents great advantages over the older methods of cleaning. With this method exists no danger of shrinking or felting of woolen goods which trouble was unavoidable with the older cleaning processes, and the most delicate colors, such as are found upon decorative materials, are thereby not injured, nor are the waddings of men's coats thereby displaced. Ladies' evening dresses, ball robes and other richly ornamented dresses can by this method be cleaned without taking them apart or taking off the trimmings; and many articles of domestic use which would be rendered unfit for use by the ordinary cleaning process are by this process restored to their original cleanness, besides saving the cost of undoing and resewing and retrimming. In view of such advantages it is not to be wondered at, that the old methods are giving way to the new one.

Benzin or benzolin is the principal detergent employed in this process, and as this substance is very volatile and very rapidly escapes in the form of gas from the material, which becomes dry in an exceedingly short space of time, the method has been called "dry cleaning." In reality, however, the goods are immersed in the liquid and washed therein, so that the term "dry" does not strictly correspond with the fact. There are various kinds of benzin employed, viz.: such as is manufactured from American petroleum, Scotch shale, and from coal-tar. Whatever kind may be used, however, its specific gravity must not be higher than 0.728 to 0.735, so that it can easily be expelled from the goods by the ordinary heat from a stove. A lower specific gravity is unnecessary and renders the process more expensive by the greater loss which is sustained by evaporation during the operation. A principal requirement is to perfectly remove the unpleasant odor of the benzin. Although the benzin itself can never be freed from its peculiar smell, the odor can completely be expelled from the goods by sufficient heat. Commercial benzin or benzolin is no constant combination, but a mixture of a number of light hydrocarbons of the paraffin series, and must not be confounded with the constant chemical compound Benzol C_6H_6 of the aromatic series (which is by some writers improperly called benzene.—ED.), which certainly give very superior results, but is by far too dear for this purpose.

The properties which render benzin so available for this cleaning purpose consist in its dissolving power for fats and some resins, which is the cause that it acts injuriously upon such goods as waterproof rubber coats. Stains of grease, perspiration, etc., yield very quickly to the action of benzin, and dirt upon garments and articles of domestic use, which is ordinarily not removed by this means, is loosened thereby and then removed mechanically. Benzin when used alone has little or no power to remove the dirt or dust, so often collecting at the lower edges of ladies' dresses and men's trousers.

On rubbing the hands together in benzin a feeling of hardness is experienced, similar to that caused by washing the hands in hard water, and it has since long been recognized that, if an alkali, especially in the form of a soap, or some other chemical substance in solution, could be added to the benzin, its cleansing property would be considerably heightened, and its application could be extended even to very dirty articles, upon which it alone has very little influence. The great antipathy, however, which benzin shows against water renders its mixing with other substances very difficult, for the simple reason that there are but very few chemical products which contain no water of crystallization. Potash and water in the form of hydrates and carbonates, purified alkali, the ordinary and so-called dry soaps, borax, etc., are all insoluble in benzin, probably because all of them, however well dried, contain a small percentage of water which cannot be driven off. Experiments have been made with sawdust, crushed marble, bran and other finely divided substances, for the purpose of removing by their mechanical effect the dirt, which the benzin alone leaves intact, but all these attempts have only had comparatively small success. The use of these substances is rather disadvantageous, because they penetrate into the folds and pleats of dresses, into the pockets and seams generally, whence they are difficult to remove in finishing.

Only quite recently were several soaps soluble in benzin introduced in commerce at comparatively low prices, so they may be used on an extensive scale. When applied in proper quantities they do not injure colors. This property of mollifying the cheap-petroleum benzin does away, therefore, with the necessity to use much dearer coal-tar benzin which was thus far required for very fine material.

Of the antipathy of benzin against water we have spoken before. It is so great that the benzin has but little influence upon goods which have been worn but recently, because they always contain a certain amount of humidity. The first step in dry cleaning consists, therefore, in drying the goods in a drying room to remove this moisture. It is a great advantage and saving of time and benzin to beat or shake, while drying, as much dust as possible out of the material; a slowly revolving beating cylinder, similar to the American carpet-beater, but narrower, is a very valuable machine for this purpose. The goods are then entered into the benzin washing machines, which are mostly cylindrical, and after revolving several times in one direction are automatically reversed to make as many revolutions in the opposite direction, and continue this alternating motion automatically. The best of these washers is composed of a receptacle, preferably of iron, which contains the benzin, and in which revolves a wooden cylinder with perforated sides and diaphragms, and with the necessary gear and automatical reversing contrivance. The outer iron receptacle must be provided with a perfectly tight-fitting cover, which in case of danger from fire is shut down in order to at once smother the flame. The whole plant must be so arranged that the fire-danger is reduced to a minimum, and that an accidental outbreak of fire can easily be put out. This is a matter of great importance on account of the great inflammability of benzin and because water does not extinguish benzin since the latter, being lighter, floats upon the water and simply continues to burn upon its surface. The inner wooden drum is provided with a sliding door, through which the goods are entered and removed. The best plan is to feed the benzin into the washer by means of a pipe connected with the storage cask, and, on account of the great danger of fire and of the loss by evaporation, to entirely avoid the handling of the benzin in open tubs or buckets.

We have already mentioned the advantageousness of the use of bensin-soaps; although it is impossible to give exact directions as regards the quality to employ for all kinds of materials, it may be generally remarked that 1 pound of this soap for 45—50 lit. benzin is a favorable proportion. The goods are according to their nature and the quantity of impurities for 15 to 30 minutes treated in the washing machine. For greater economy in benzin it is also advisable to first wash the goods in benzin that has already been used and, after drawing off the dirty liquid, to treat them again with clean benzin. The used benzin is from the washer emptied out through a pipe into a reservoir, to be purified and used again.

The material being then taken out of the washing machine and placed into the hydro-extractor, from which the accumulating benzin is again through a pipe drawn off into a receptacle. Some goods are after this treatment perfectly clean and ready to be hung in the drying room, where they are freed from the odor of benzin; other goods, however, still show dirty places, especially at the bottom parts of garments, which are then cleaned by hand by means of a brush, with soap and benzin. Such goods are then again placed into the washer to wash out the soap. Small articles, such as gloves, ribbons, laces, etc., are cleaned cheapest by brushing them by hand with soap and benzin. For buckskin gloves a strong solution of soap must be avoided, as it softens the leather. The odor of benzin being removed in the drying room, which is for safety best heated by steam, the goods are finished. Silk goods require little or no finishing, but woolen

"Commend

Me

to Your
Honorable Wife"

—Merchant of Venice.

and tell her that I am composed of clarified cottonseed oil and refined beef suet; that I am the purest of all cooking fats; that my name is

Cottolene

that I am better than lard, and more useful than butter; that I am equal in shortening to twice the quantity of either, and make food much easier of digestion. I am to be found everywhere in 3 and 5 pound pails, but am Made only by

THE
N. K. FAIRBANK
COMPANY
Chicago, New York, Boston,
Montreal, San Francisco,
Philadelphia, St. Louis.

goods must be ironed and gentlemen's goods pressed.

Of great importance is the purification of the used benzin, for which purpose several methods have been suggested. Filter presses and all kinds of filters are not recommended on account of the trouble of cleaning them. Settling-tubs are advantageously employed since the contaminations of the benzin gradually settle to the bottom and a comparatively clean benzin is obtained, which is very well utilizable for first washing. When water is added and the benzin shaken with it, the water on account of its greater specific gravity settles rapidly to the bottom, carrying considerable quantities of impurities with it. The most employed method is distillation of the whole quantity of benzin, or at least of the dirtiest part of it. The best apparatus is the ordinary copper still with cooler and condenser. Formerly the distilling vessels were jacketed and the benzin was distilled and condensed alone, but the dirt and grease forming upon the surface of the benzin a solid layer in the distilling vessels, the distillation was retarded, because the benzin in the gaseous state could but difficultly penetrate the solid top layer. For this reason steam was recently introduced into the stills, whose contents are thereby kept in constant motion; the aqueous vapor passes over together with the benzin vapors and is condensed together with them. At the outlet of the serpentine pipe the condensed benzin and water enter into an ingeniously constructed separator, from which the water flows out at the bottom and the benzin at the top. The separator acts so exactly that it needs no supervision, and that not the slightest loss in benzin occurs. A mere trifling quantity of water, which nevertheless remains mechanically associated with the benzin, would be objectionable, were it not that the benzin flows from the separator into collecting vessels, in which the water settles rapidly to the bottom, and the outlet-cocks of this vessel being inserted a little distance above the bottom, the water alone remains. The dirt accumulating in the stills is easy to blow out through the gates by steam. A great advantage by this method is, that the benzin is by each distillation more purified and freed from its peculiar odor, and therefore more valuable than fresh benzin.

It goes without saying, that no fire nor open gas lights must be used in the washing or drying rooms, on account of the high inflammability of benzin and the explosive character of the mixture of benzin-vapor and air. When, therefore, electric incandescent light cnnot be had, the best plan is to use at night work gas lamps which are placed outside of the house and throw their light through absolutely tight-fitting windows.—*Textile Colorist.*

50 YRS. THE ORIGINAL CORN STARCH. 50 YRS.

KINGSFORD'S OSWEGO STARCH

PUREST STRONGEST BEST

Highest Awards

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1893. 1876. 1851.

Try "SILVER GLOSS."

T. KINGSFORD & SON. Manufacturers OSWEGO, N.Y. U.S.A.

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BUSINESS NOTES.

A PALATABLE PREPARATION OF SENNA.

Bartholomew says that senna would be one of our best cathartics, "if it were not so disagreeable." This disagreeableness is not only removed but pleasantness is put in its place in that preparation of senna known as Syrup of Figs. It forms the active principle of that effective laxative, and because of the pleasant taste of the combination, it has a large use in all cases where a general laxative is indicated.

The great contrast between the old dosing of castor oil, when there was almost open war declared in the home, and the modern method of preparing drugs to please the palate, as well as to accomplish the desired result, is best appreciated by those of us who remember our childhood days, and now have children of our own. These thoughts come to us as we notice with what indifference a child or sensitive patient takes the laxative prepared—Syrup of Figs—by the California Fig Syrup Company. But we can assure our readers the results are far from indifferent.

In this connection it is well to observe, for it is a matter of no small importance to the public, that the highest courts in the land have decided the validity of trade-marks, trade-names, or trade-words, for it is the safest protection against the selling of worthless imitations and base frauds. For instance, a company places a most eligible preparation on the market and presents it to the public at a great outlay before the least profit is derived. These unscrupulous imitators place worthless combinations on sale and derive at once their share of the large sales which the energy and capital of the originators ensured. Soon, however, these worthless samples injure the sales, and a preparation which was originally a very desirable combination, becomes known as uncertain and disappointing. Now a trade-mark, or trade-word, is a protection to the public from these evil designers. Take the recent case of the California Fig Syrup Company. The United States Court of Appeals, which is the court of highest resort in such cases, rendered a decision on the 30th of January last that this company had acquired a reputation for the excellence of this medicine under the name of "Fig Syrup" or "Syrup of Figs," and they only had the right to use this name in connection with a laxative remedy.

◆

The seven wonders of the middle ages were: The Colosseum at Rome, the Catacombs of Alexandria, the great wall of China, Stonehenge, the leaning tower of Pisa, the porcelain tower of Nankin and the Mosque of St. Sophia at Constantinople.

The first translation of the Bible was the celebrated Greek version of the Old Testament, called the Septuagint, made B. C. 285. The meaning of the title is 70, and was bestowed upon the work because of the approval of the version by the Sanhedrin, the highest Jewish tribunal, composed of seventy-one members.

The tallest people in the world of whom there are any accounts are the Patagonian Indians. These people though not absolutely gigantic, are never under six feet in height and are bulky in proportion, but their limbs are neither so muscular nor so large-boned as their stature and apparent stoutness would indicate.

LITERARY NOTICES.

THE POLITICAL ECONOMY OF NATURAL LAW.

Messrs. Lee and Shepard have issued a new book by Henry Wood, author of "Ideal Suggestions," "God's Image in Man," "Edward Burton," etc., under the above title. Its purpose is to outline a political economy which is practical and natural rather than theoretical and artificial, being a study of inherent laws and principles. In 1887 this author issued a volume entitled, "Natural Law in the Business World," which was well received and passed through several editions. The present book is not a revised edition, but substantially a new book of double the size.

The titles of a few of the twenty-four chapters will give some idea of its contents. Among them are: The Law of Co-operation, The Law of Competition, Combinations of Capital, Combinations of Labor, Profit Sharing, Socialism, Economic Legislation, Can Capital and Labor Be Harmonized, The Distribution of Wealth, The Centralization of Business, Booms and Panics, Money and Coinage, Tariffs and Protection, Industrial Education, etc., etc.

Political economy is interpreted from the standpoint of evolution and natural law. The idealism and optimism of this book strongly distinguish it from many of the pessimistic treatises of the present time.

Mr. Wood has the faculty of rendering this usually dry subject not only instructive, but positively entertaining. He has given many years of careful study to the practical phases of social economics, in their relation to natural law, and each chapter is thoroughly original and telling in its special department.

[The Political Economy of Natural Law. By Henry Wood. Boston. Lee and Shepard; $1.25.

◆

KEIL'S MEDICAL AND DENTAL REGISTER.

George Keil, 2715 Willington street, Philadelphia, announces the early publication (third edition), of the "Medical and Dental Register-Directory and Intelligencer," for the States of Pennsylvania, New York, New Jersey, Maryland and Delaware. It will present not only a complete list of all medical and dental practitioners in the States named, with place and date of graduation, but also lists of professional educational institutions, hospitals, societies, etc., etc., and will be of much practical value to all members of these professions.

◆

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◆

Laura—When your father came in was Jack on his knees?

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Train Robber—Come! shell out!

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AN UNSAVORY ADVERTISEMENT.

One of the journals devoted to the science of advertising devotes a column to the reproduction of an illustrated advertisement under the heading, "Experts at soup making, but not at advertisement making." The illustrations represent a cook dragging an unwilling cat by a string around the neck, while the second picture represents the same cook stirring a pot over the fire. The first picture is explained to represent in the accompanying letter press as "the raw material," the second as "ready to serve." The journal from which we quote adds the following comment, which needs no addition from us:

The above suggestive (*sic*) pictures are from a full-page advertisement of the Franco-American Food Company, manufacturers of canned soups, which appeared in leading magazines for January, headed "The Science of (Cheap) Soup Making."

And to think it should come to this!
No, thanks, oysters and fish, please.

With apologies to Mark Twain we offer this verse, which may aid them in making *all* canned soups suggestive:

Catch, cooks, catch with care,
All the cats in the open air;
Can, cooks, can without hair
The cats and dogs from everywhere.

BUTTERINE.

The *Northwestern Grocer* speaks as follows of the legal status of butterine in Minnesota:

While, so far as we are informed at this writing, the decision of Judge Smith in the butterine case is based largely on the fact that the state of Minnesota has no authority to prevent the sale of an article that is recognized by the federal authority as a proper article of merchandise, it strikes, though indirectly, a blow at all the nonsense which creeps into the legislation of a State—and especially an agricultural State—on the subject of food legislation. There is nothing on which legislation has run riot more than on food matters. There has been a wide field for this, because there are few things more important than that the great consuming public should be protected against adulterations. But when such matter is once opened for legislation, it gives room for all the isms of all the cranks, and all the schemes of all the interested schemers to foist upon statute books laws that have no place there whatever. The State must inform and protect its citizens, but the State deserts its proper functions (and becomes something more than a State) when it takes the place of the parent, or when it supersedes the absolute rights of individual judgment and independent action in those directions where harm does not lie for the individual. The tendency of all our legislation runs too strongly in the objectional direction indicated. If it does not receive checks from time to time, the day may come when the people will find that there is no tyranny worse than that they practice on themselves; that, in other words, a republic has in it the elements of a despotism whose authority may subject its people to a rigor in government that would be more obnoxious than that of the worst autocracy that ever existed. This may seem like a good deal to say with oleomargarine as a text, but those who see the drift and have the opportunity to say these things ought to say them every time they get the chance. The one danger that most seriously threatens the American people is too much government, too many laws, too great desire on the part of the people themselves to throw upon the government responsibility which belongs to the individual alone. There never was a wiser saying than that that country is best governed which is governed the least. In our local columns will be found a brief report of the decision and accompanying opinion of Judge Smith of the Fourth Judicial District of Minnesota, with reference to the Minnesota law on the sale of butter substitutes. In brief, this opinion is that the law requiring that such products should be colored pink is unconstitutional. This, we hope, will be approved by the supreme court of the State as good law, as it most assuredly is good common sense. The gist of the whole matter is right here; if the sale of oleomargarine, or butterine, or other substitute is permitted under any circumstances by the State (as it is permitted by the laws of Minnesota), the State has no right to step in and say that this article, or any other, shall be so doctored or treated as to make it something different from its natural condition. The natural color of butterine, quite to the same extent as butter, is yellow. As a matter of equity and common sense (and it seems from Judge Smith's decision as a matter of law), the State has no right whatever to step in and say, in its efforts to protect the people from false food articles, "you, the manufacturer of this imitation, must still further falsify it by coloring it something which it is not naturally." Now, the next and the proper step for the manufacturers to take, is to move along those lines which will lead to the establishment of this paramount fact: That the people have a perfect right to buy, and dealers to sell, any article for food purposes which is not deleterious to health, provided there is no deception practiced in such sale and purchase; provided the people who buy know just what they are buying.

HOUSEHOLD.

TESTED RECEIPTS.

Every receipt here given is original, has been practically tested by the AMERICAN ANALYST and is therefore confidently recommended.

GREEN PEA SOUP.

Cover a quart of green peas with hot water, and boil, with an onion, until they will mash easily. (The time will depend on the age of the peas, but will be from twenty to thirty minutes). Mash, and add a pint of stock or water. Cook together two tablespoonfuls of butter and one of flour until smooth, but not brown. Add to the peas, and then add a cupful of cream and one of milk. Season with salt and pepper, and let boil up at once. Strain and serve. A cupful of whipped cream added the last moment is an improvement.

CREAM OF RICE SOUP.

Two quarts of chicken stock (the water in which fowl have been boiled will answer), one teacupful of rice, a quart of cream or milk, a small onion, a stalk of celery, and salt and pepper to taste. Wash rice carefully, and add to chicken stock, onion and celery. Cook slowly two hours (it should hardly bubble). Put through a sieve; add seasoning and the milk or cream, which has been allowed to come just to a boil. If milk, use also a tablespoonful of butter.

DUCHESS SOUP.

One quart of milk, two large onions, three eggs, two tablespoonfuls butter, two of flour, salt, pepper, two tablespoonfuls grated cheese. Put milk on to boil. Fry the butter and onions together for eight minutes; then add dry flour, and cook two minutes longer, being careful not to burn. Stir into the milk, and cook ten minutes. Rub through a strainer, and return to the fire. Now add the cheese. Beat the eggs, with a speck of pepper and half a teaspoonful of salt. Season the soup with salt and pepper. Hold the colander over the soup, and pour the eggs through, upon the butter, and set back for three minutes where it will not boil. Then serve. The cheese may be omitted if it is not liked.

EGG BALLS.

Boil four eggs ten minutes. Drop into cold water, and when cool remove the yelks. Pound these in a mortar until reduced to a paste, and then beat them with a teaspoonful of salt, a speck of pepper and the white of one raw egg. Form in balls about the size of a walnut. Roll in flour, and fry brown in butter or chicken fat, being careful not to burn.

LOBSTER CROQUETTES.

Mince the flesh of a lobster, season with salt, spices, and a little cayenne. Melt a piece of butter in a saucepan, mix with it a teaspoonful of flour, then the lobster and some chopped parsley; moisten with a little stock, until the mixture looks like minced veal; then stir into it off the fire a couple of yelks of eggs, and put it by to get cold. When nearly so shape it into the form of corks, egg them, and roll them in baked bread crumbs. After the lapse of an hour egg and bread-crumb them again, taking care to preserve the shape. After a little time fry them a nice color in hot lard.

SALAD OF STRING BEANS.

Boil the beans until thoroughly done, first stringing and splitting them. Set them on ice to get cold. Dress with pepper, salt, oil and vinegar.

SALAD OF BEETS.

This salad is particularly good when both beets and potatoes are new and tender. Boil in salted water equal quantities of both, and set them on ice to get cold. Just before serving cut them into thin but regular slices, dress with pepper, salt, oil and vinegar, and garnish with watercress.

POTATOES A LA PARISIENNE.

Cut from peeled potatoes with a vegetable-cutter as many little balls as the size of the vegetable will permit. Fry them in boiling lard, being careful they don't burn. Skim them out and drain, and sprinkle them with salt. These balls may also be stewed in milk, slightly diluted with water and thickened with a little flour. Season with butter, pepper and salt.

POTATO SALAD.

Take four or five hot, boiled potatoes, half a small beetroot, half a small Spanish onion, plainly boiled, and about three inches of pickled cucumber. Cut them all in slices, and arrange them on dish. Pour over them a salad dressing, adding a little English mustard to it. Serve with a border of hard-boiled eggs cut in slices.

SCALLOPED CHICKEN.

Cold roast or boiled chicken—chiefly the white meat. One cup gravy, one tablespoonful butter, and one egg, well beaten, one cup of fine bread-crumbs, pepper and salt. Rid the chicken of gristle and skin, and cut—not chop—into pieces less than half an inch long. Have ready the gravy or some rich drawn butter, in a saucepan on the fire. Thicken it well, and stir in the chicken, boil up once, take it off, and add the beaten egg. Cover the bottom of a buttered dish with fine bread crumbs, pour in the mixture, and put another thick layer of crumbs on top, sticking bits of butter all over it. Bake to a delicate brown in a quick oven.

CHICKEN PIE.

Take two full-grown chickens, disjoint them and cut the back bone, etc., as small as convenient. Boil them with a few slices of salt pork in water enough to cover them, let them boil quite tender, then take out the breast bone. After they boil, and the scum is taken off, put in a little onion cut very fine, not enough to taste distinctly, but just enough to flavor a little; rub some parsley very fine when dry, or cut fine when green, this gives a pleasant flavor. Season well with pepper and salt, and a few ounces of good fresh butter. When all is cooked well, have liquid enough to cover the chicken, then beat two eggs and stir in some sweet cream. Line a pan with a crust made like soda biscuit, only more shortening, put in the chicken and liquid, then cover with a crust the same as the lining. Bake till the crust is done, and you will have a good chicken pie.

HAM OMELETTE.

Remains of boiled or fried ham—cold, minced fine and seasoned, two or three eggs, one cup of milk, flour to make a good batter—about four tablespoonfuls, two tablespoonfuls of butter, chopped parsley, pepper and salt. Heat the butter to a boil in the frying pan. Mix the eggs, milk, flour, parsley, pepper and salt into a batter, and pour it into the frying pan. Lay in the middle, as soon as it begins to "form" the minced meat. Fry rather slowly, taking care that the batter does not burn. When done on one side, fold the edges of the pancake over to the middle, enclosing the meat and turn with a cake spatula. When both sides are of a delicate brown put the cake "turner" under it, and slip over to a hot dish. Send around a little gravy in a boat.

QUENELLES.

Some cold, white meat of fowls or veal. One cup fine bread crumbs, three tablespoonfuls cream or milk, two tablespoonfuls melted butter, one egg, well beaten, one cup well-flavored gravy, pepper and salt. Chop the meat very fine. Wet the crumbs with milk and drain as dry as you can. Work into this paste the meat and egg, seasoning well. Flour your hands, and make the mixtures into round balls, rolling these in flour when formed. Have ready the gravy hot in a saucepan; drop in the quenelles and boil fast five minutes. Take them up and pile upon a hot dish, thicken the gravy with browned flour; boil up once and pour over them.

BRUNSWICK STEW.

Three fine gray squirrels, skinned and cleaned; joint as you would chickens for a fricassee; one-half pound of fat salt pork; one onion, sliced; twelve ears of corn cut from the cob; six large tomatoes, pared and sliced; three tablespoonfuls of butter rolled in flour; parsley; enough water to cover the squirrels. Put on squirrels, pork—cut up small—onion, and parsley in the water, and bring to a boil. When this has lasted ten minutes put in the corn and stew until the squirrels are tender. Then add the tomatoes, cut up thin. Twenty minutes later, stir in the butter and flour. Simmer ten minutes, and pour into a large deep dish.

BAKED BEEFSTEAK.

Take the bone from a large sirloin steak; flatten it with the side of a hatchet, wash over the upper side with a beaten egg and spread thickly with a force-meat of crumbs, minced ham, and any other cold meat you may have, a teaspoonful of minced onion, a pinch of grated lemon peel, with pepper and salt, a beaten egg and three tablespoonfuls of cream or milk. Work these into a paste before spreading. Roll the steak upon them, binding closely with soft pack-thread. Have ready some dripping in a frying pan, and cook the steak five minutes in this, turning as it browns. Now lay it in a dripping pan with a cupful of boiling water; cover and bake forty minutes, basting and turning often. When done, remove the strings; lay the beef upon a hot dish; thicken the gravy with browned flour, boil up and pour half over it—the rest into a boat.

MEDICAL.

HEALTH JOTTINGS.

BY W. F. CURRYER, M. D.

Ignorance is always reckless.

If you are well, let yourself alone.

The dyspeptic kills himself; the drunkard kills others.

Filth, disease and moral death are associated together in all times and places.

A piece of ice laid on the wrist, it is said, will often stop violent bleeding at the nose.

There is a delirum tremens of over-eating as well as over-drinking.

Persons with weak eyes should not read or write, or do any fine sewing with an empty stomach.

"A dying man can do nothing easy" were the last words of our immortal Franklin. A diseased man can do nothing well, are words equally as true.

Many a young man or woman has been saved from the halter or a dissolute life by making themselves useful in their father's house under all circumstances.

Flies have a perfect antipathy against clean houses. Flies revel in filth the world over.

Never go to sleep, especially after a great effort, even in hot weather, without some covering over you.

A good maxim is "never to eat without an inclination," yet thousands dig their graves annually with their teeth.

It is a bad plan for unprofessional people to read medical books; it befogs and then befools.

The rich can't get to sleep; the poor can't wake up; that is, would oversleep themselves if necessities did not wake them up.

In cholera and all epidemics, the liquor drinkers are the first to die.

Clergyman's sore throat is wrongfully set down to the score of "arduous labors."

No one should work or study hard within half an hour of a regular meal.

Any kind of fluid largely taken at a meal, or soon after, is positively injurious to health.

A sleeping apartment should be always on the sunny or southern side, for there it will be dry and warm and cheerful; there is a superabundance of life in it.

Do not allow yourself to read a moment in any reclining position, whether in bed or on a sofa.

It is said Milton's blindness was the result of overwork and dyspepsia.

THE HYGIENE OF THE EYE.

F. C. HEATH, A. M., M. D., INDIANAPOLIS, IND.

Next in importance to life itself is the faculty of vision. No man, be he Crœsus or Vanderbilt, would consider his fortune for a moment in comparison with his eyes. How, then, to preserve the eye in a healthy state becomes an interesting question not only to the doctor but every seeing member of the human family. Preventive medicine has here a field of transcending importance.

It may be said in a general way that the eye is much affected by the constitutional condition, therefore, is concerned indirectly in all measures of general hygiene, but it is the special hygienic measures necessary to the preservation of sight that claim our attention in considering this subject.

No feature of face or form compares with the eye in beauty and expressiveness, and as seen in childhood, with lustre undimmed by age or accident and with conjunctiva uncolored by disease or drug, it is to the oculist what the finest of painting is to the artist.

First in time as well as importance comes the eye of infancy. To produce an ideal child it is said that we should commence two hundred years before he is born—to get good eyes would require equal attention to antecedents. But taking things as we find them, what is our first duty? Immediately after birth the child's eyes should be wiped with a clean cloth (the lids being closed). In bathing the first time, keep the water of the bath from the eyes—then clean them with cloth and clean water, dropping in one drop of a 2 per cent nitrate of silver solution. This simple course, if followed by all obstetricians, would reduce the cases of blindness at least 10 per cent. This I believe to be the ideal method for lying-in hospitals and for all cases of suspicious vaginal discharge in the mothers. How far it can be employed as a routine in private practice, or what substitute should be used, may be left to the judgment and the conscience of each practitioner.

Attention to cleanliness, general hygiene, and protection from too strong light or other injurious influences, suffice until our babies have become school-children.

In Germany and in some parts of this country, the hygiene of the eyes of school-children has received considerable attention, but, in general, far less than the importance of the subject demands. Pre-eminent among the dangers at this stage is the production or increase of myopia or "near-sightedness." This may result from prolonged use of the eyes or near objects, especially under unfavorable conditions. It was found in Germany, that myopia increased from twenty per cent in the lower grade schools to sixty per cent in the higher. Of 1133 school children whose eyes were examined in New York, less than four per cent were found nearsighted at seven years of age, but nearly twenty-seven per cent at twenty years. The practical point in the investigation was the discovery of the unfavorable conditions and their removal as far as possible.

Bad air and excessive heat were found to affect the eye muscles by enfeebling the system, and to indirectly increase myopia by tending to congest the eyes. A still greater factor in this direction is the working in an improper position—with the head bent over a low desk, for example. The failure to regulate the height of desks according to the size of pupil is about on a par with that method of distributing army clothing condemned by Dickens on the ground that "the tall soldiers got the long pantaloons and the short soldiers got the longer ones." If desks are too low or of improper slope, or if seats are uncomfortable, the children are likely to lean forward, resulting in the double harm of congesting the blood-vessels and bringing the eyes too near to their work.

Perhaps the most important consideration, here, is the direction and amount of light. Cohn, who examined the eyes of over ten thousand school children in Germany, found 1.4 per cent of pupils in village schools near-sighted, and 11.4 per cent in the city schools similarly afflicted, the difference in the proportion being attributed, principally, to the fact that the city schools were darkened by the height of surrounding buildings, while the village schools stood by themselves and obtained light in abundance from all sides. Defective light works injury by causing pupils to bring their work nearer, to make up for the deficiency. Too strong light, or light shining directly in the eyes, irritates the retina and conjunctiva, and also causes too close approach to the desk in bending to avoid the glare. The light should come preferably from the left side.

The kind and duration of work are the other factors worthy of special mention in the hygiene of the eyes of school-children. Small and indistinct print acts much like defective light. Greek and German text are especially trying. Writing with pale ink should not be allowed. Written examinations should not be too frequent. It will be admitted that written work, from its tendency to exactness, is a desirable educationable feature, but it should be employed far less than at present, when it is, undoubtedly, injuring the health and eyes of thousands of pupils and of teachers as well. The hours of study, too, are much too long, and intermissions are too short and too infrequent. Intervals of rest greatly relieve the eyes. If all students were to cultivate the habit of looking up from their books frequently to think over what they have been reading, it would be a source of great mental improvement as well as affording the eyes much-needed rest.

The removal of the above unfavorable conditions as far as possible, according to Von Hippel, has reduced myopia in Germany at least six per cent. In the face of these facts, is it not high time that we were doing something to arrest this growing evil in our own country? The responsibility rests largely with physicians as leaders of society and conservators of public health and welfare. Concerted action under our leadership should accomplish as much here as has been accomplished by the labors of our professional brothers in Germany.

Our school-children graduate and enter different lines of business, each perhaps with its especial dangers to the eye. Stone cutters, machinists, and those in exposed vocations, are liable to various accidents, especially from foreign bodies in the eye. Hence they require some form of protective glasses. These may be of glass, circular in shape, but if we wish to make them unbreakable, they should be of mica or wire gauze; these are, however, open to the objections that they obscure the light to some extent, and, if in the form of goggles, retain the moisture of the eye and hence may increase the irritation. To those whose work requires facing strong lights like the electric arc light, the best protection is the smoked glasses. These should not be too dark, and should be worn only when absolutely necessary, lest they render the eye more sensitive to light than before, besides causing eye-strain from efforts to see through them. The habitual use of these glasses from slight and insufficient causes is getting to be a very common mistake, indeed, it might well be added to the list of humanity's self-imposed ills as the "smoked-glass habit." These remarks are, of course, not intended to preclude the use of protectives when needed by actual disease of marked photophobia. They may, then, furnish great relief and even prove curative by affording rest and freedom from irritation. Blue glasses exclude heat-rays and lessen color rays, but give less protection than smoked and are less comfortable; other colors are far more objectionable. Shades, veils and curtains have their uses, also to be governed by the principles already laid down plus such common sense as the special occasion may demand.

In cases of severe disease and after operations, dark rooms may be an occasional necessity, but their bad influence on the minds and bodies of patients being appreciated, they should be used only when unavoidable, and then for but a short time.

Rest should be considered as one of the most important factors in treating diseased or strained eyes; rest of eyes, body and mind. Avoidance of wind, dust and smoke, or protection from their evil effects, must not be neglected.

Personal habits enter into the question of causation of eye disease, and their regulation becomes, therefore, a part of the preventive of hygienic treatment. Sexual excesses undoubtedly contribute to the production of muscular asthenopia and hysterical ambloyopia and photophobia, besides affecting the conjunctiva indirectly through their influence on nasal catarrh. Tobacco and alcohol have their well-recognized amblyopias. Lack of bathing the eyes properly may result in conjunctival trouble. Use of water, both cold and hot, may have a place in the hygienic treatment of diseased eyes. Employ, as a rule, that which is the more grateful to the patient; cold usually for conjunctival diseases and injuries; hot for iritic and deeper troubles, avoiding anything like a poultice. Indeed, there should be a limit to cold application lest the nutrition of the cornea become enfeebled, while that delicate tissue requires still greater care in the use of hot applications (seldom exceeding one hour at a time) from fear of maceration and consequent ulceration. Diet is important chiefly through its effects upon indigestion and general health, which frequently have much to do with the condition of the eye.

A few words as to abuse of eyes may not be amiss. The first offence in this line is reading with a poor light—requiring the cilliary muscle to do extra work to sharpen the vision. This applies to dim light, twilight, sitting too far from the light, etc.

The second offence is error of posture—stooping or lying down congests the eye, besides requiring unnatural work of the eye muscles.

Reading on trains is our third offence, the motion causing such frequent changes of focus and position as to tax the muscle of accommodation as well as the muscles of fixation, so to speak.

Reading without needed glasses or with badly fitting ones is our last, but not least, offence. Aside from the various well-known reflex effects of eye strain, the danger to the eye itself is not to be slighted. Eye strain is certainly a factor in producing disease of almost every part of the eye, its most serious effects being choroiditis, glaucoma and cataract.

Old age is the time of retribution for eye-sinners—it calls for little in a special hygienic way beyond the occasional stimulating washes and the careful husbanding of what sight remains.

Fortunately the surgeon's skill can give nearly all sufferers from cataract a greater triumph over their troubles than is afforded any other sufferers whatever, yet it is only after quite a period of darkness in waiting the ripening of the cataract.

In this brief space, exhaustive treatment of the subject is out of the question, but our object has been accomplished if these hints lead to greater attention to an important field which has been sadly neglected.

HYGIENIC.

HYGIENE OF THE NOSE.

The prevalence of catarrh naturally directs the inquiring one to the causes that lead to that disagreeable disease to treat, and still more disagreeable malady to have. Changeableness of climate and like atmospheric causes bear the brunt of blame. To those physicians who are so fortunate as to have cases of nasal diphtheria to treat there comes the conviction that the observance of simple hygiene in times gone by would have saved a world of trouble later on, and maybe a life; this simple act being the very necessary one of blowing the nose. The child should be taught, as it easily can be, to blow the nose when that act is required. Many parents are careless about this simple, but very necessary hygienic duty. In infancy the mucous membranes secrete freely. The nose is always discharging mucous. When this mucous is not removed it becomes dried, and catching the dust and dirt becomes a veritable source of irritation. Indeed this substance would do incalculable harm were it not for the fact that the ever-forming discharge tends to float it off. The accumulation of this or any substance in the nose prevents the free passage of air, and so it happens that the child whose nose is blockaded has to breathe through the mouth. The voice also assumes a nasal twang because the air cannot pass through the nose—as much as that sounds like an Irish bull.

The result of closing the nostrils wholly or in part has the effect of confining the secretions and changing the means of exit. In this way the nasal secretions are pent up and finally find escape by passing into the throat. This process is vigorously protested against by the parts concerned, particularly the soft palate and the pharynx. For this reason the habit of hawking—a most disgusting habit, too—is formed so easily, and when once formed is not so easily broken. Hawking is not only a habit that belongs in the category of unpardonable offences, but it injures the soft palate, and must affect the taste as well as keep the throat in a constant state of irritation. The effect of permitting the nose to be blockaded, then, does several things that are harmful—it spoils the voice, it affects the throat disastrously, it injures the sense of smell by its irritable action upon the delicate parts, it injures the nerves of taste in part of their distribution, and finally it affects the breath, and makes the possessor monarch of all he breathes upon.

As the mission of the doctor is to prevent disease quite as much as to cure, it follows that parents should be taught to teach their children to blow the nose when a blow will do the most good. The cause of neglect is very often explained by the very awkward manner in which the simple task of wiping the nose is done. We all have seen good mothers grab a child and after a struggle of more or less vigor, the child emerges with a nose as red as a lobster. If that child has his nose wiped again it will be when he can't help it. The act of blowing the nose is neither complex, nor ought it to be painful. It can't be done with a handkerchief as stiff as a piece of tin and not affect the integrity of the nose. Enlarged tonsils, giving to the voice an unpleasant twang, might be avoided if the nasal secretion were allowed to escape as it forms, and not be compelled to remain in contact with the delicate parts until the secretion has assumed an almost pus-like nature. Enlarged tonsils do an inestimable amount of harm in that they render mouth-breathing a necessity instead of a habit. Colds are more easily taken, while the throat is always tender, and the possessor is unable to read or speak for any length of time without becoming hoarse.

The neglect to teach children the need of taking proper care of the nose causes a world of trouble if that terrible disease known as diphtheria attacks the child so neglected. In nasal diphtheria the nose must be kept open, or the child will surely die. How often it happens that the simple task of washing out the nose is rendered a difficult matter by the fact that the nose has not been kept in a state compatible with health, and the effort to do the work then is made still more difficult by the struggles of a child not accustomed to have a simple act done at any time. Add to this difficult task an ignorance not only of the needs of the case, but also a mistaken notion of the firmness required, and you have a fond mother fold her arms about her child and say, "He shall not hurt mamma's darling," and then when the grim messenger stands in the doorway and beckons, and a little life goes out and with it the cheery voice that made heaven seem nigh about, the sorrow is made more poignant because of the realization that ignorance and neglect had more to do with the calamity than the severity of the disease.

Then, if you would do your patrons a genuine service, tell them to teach their children to blow their nose. Nor does this advice begin at the age when that act can be accomplished without assistance. The babe in the cradle needs to have the nose attended to as well and even more than at any other time. Snuffles need not be regarded as a matter for any great commotion. With a small pair of tweezers let the mother remove the inspissated mucous, and the work is done. By the careful attention which needs demand much suffering may be avoided, and many, if not most of the cases of catarrah be rendered nil.

Another fact that adults might be taught with advantage to themselves and a world of comfort to their associates, is that the way to dispose of the nasal secretion is by the front door, not the back way. The habit of hawking is entirely a cultivated one, and there is not a single apology for it. Its continuance injures the throat, and the practice is not in good form anywhere. It keeps the soft palate constantly irritated, and it keeps the tonsils in the same state. It invites catarrh and it encourages snoring, for the soft palate becomes relaxed by constant abuse to which it is subjected.

They say "out west" that the vigilance committee was originally formed to get snoring disturbers of the peace out of the way, and that the horse-thief industry was a secondary consideration, and it may be so. Be that as it may, there can be no question as to the bad effects of the disregard of the hygienic care of the nose.—*Med. Summary.*

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DEATH IN DUST.

The disease laden dust we breathe in large cities is no doubt the cause of many deaths.

"It is not the promised land, it is the land of promise," says a Chicago correspondent of a French contemporary in speaking of the municipal government of the United States. "The patience of the people, which to a French mind appears bordering on cowardice, is forever duped by the promises and platforms of thievish demagogues. There is not a town in the whole of Europe, unless we except those of Russia, that for a moment would submit to what cities like New York, Philadelphia, Baltimore, Chicago and other large cities endure on the part of their municipal administration from year to year, from month to month, and from one week to another." This reminds one forcibly of experiments made in our own midst. Not to mention other subjects some of which are perhaps weightier because of their moral aspect, the dirt and dust of our streets is still intolerable. Dr. Manfredi, in a monograph "On the Contamination of the Street Surface in Large Towns," answers the question, "What do we breathe?" with "Death in dust." For what does a city's dust contain? It contains, says the professor, all pathogenic germs, erysipelas, tuberculosis, carbon, carbuncles, diphtheria, scarlet fever, tetanus, typhoid fever, etc. All these germs for weeks and whole months resist the driest weather, while the air carries them to our whiskers, upon our lips, into our mouths and lungs. The dust enters our organs of breathing, our residences and settles on our food.

Professor Perroncito calls attention to the fact that perspiration frequently forms a channel for the introduction of microbes into the system. Street infection, as he calls it, is not only continuous and uninterrupted, but unequalled in its violence and results by any other contagion. Street cleaning, he urges, should never be done without repeated and liberal sprinkling. Dr. Hericourt, rather sensationally, we must say, calls the hand of the sweeper that grasps the broom "the assassin's fist." Dr. Manfredi, of Monico, a sanitated town, found 3,000,006 of microbes in each grain of street sweepings, while in Naples he found in some cases as many as five millions of them in the same volume of pavement dirt. Its inoculation in animals produced tetanus, typhoid, tuberculosis, carbuncle and other diseases. "In a dusty city," he concludes, "we live and breathe as in the atmosphere of a tiger's den." —*Pacific Medical Journal.*

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MY LADY'S HANDS.

SOME SUGGESTIONS AS TO HOW THEY MAY BE BEAUTIFIED.

Finger nails that glisten like isinglass are no longer considered desirable possessions, and the woman who patronizes a manicure who leaves her nails shining should go home and use a nail brush and warm water before appearing in public. Neither is it now in good taste to wear the nails cut to a sharp point. They should be trimmed in an oval that matches the contour of the base of the nail.

The best thing for a woman to do who aspires to have beautiful nails is to give her hands into the care of a thoroughly good manicure for a couple of weeks. After the nails have thus been started in the way they should go, home attention will suffice to keep them as they should be kept.

The treatment by the manicure is supposed to have rid the nails of unsightly skin and flesh growths. After the skin about the nails has once been pressed into its propar shape, it must never be cut. Cutting hardens it and causes new growths. While the skin is still soft from water it should be pressed back every day with a soft orange-wood stick. An occasional rubbing with cut lemon also prevents hang-nails and other small deformities.

The nails should be cut exactly to the round of the finger and filed smooth. Warm water, soap, and a nail brush will remove all the dirt, and an iron file should never be used to complete the work. The iron roughens the inside of the nail and makes it coarse and hard. A soft orange-wood stick is the best cleaner.

When the nails have been cleaned, cut and rid of extraneous growths, a few minutes' polishing with a chamois polisher, guiltless of brightening salve or powder, will make them exactly what nails should be. Once a fortnight or so the natural polish may be helped by the application of salve or powder, but the hands must be promptly plunged into warm water to save them from the imputation of artificial brilliancy.

MILK TICKETS AS A MEDIUM OF INFECTION.

In an ordinance recently adopted by the council of Menominee, Mich., to regulate the selling of milk, a good point is made in giving protection against possible infection through the medium of milk tickets.

Section 11 provides that "No licensed milk dealer shall receive compensation in tickets from houses or premises which are placarded by the health officer until such placard has been removed, and all tickets found by such licensed milk dealer in such houses shall at once be destroyed by burning the same and new tickets issued in place of such as shall be found in infected houses. All milk tickets shall bear date of first use and be destroyed within three months."

What about soiled milk tickets or fouler money being left in the empty milk pails for the milkman?

This is in line with the action of the health authorities of Urbana, O. An order has been adopted prohibiting the use of theatre tickets brought from some other city, the manager of each troupe being compelled to issue new tickets for the people of Urbana.

It is certainly well that every possible avenue of contagion should be guarded as closely as possible; but what is to be done with our dirty paper currency.

INVENTIONS, SCIENCE, ETC.

ELECTRIC HEATING.

From an interesting article in the *Electrical Engineer* we take the following, by W. S. Hedaway, Jr.:

A well-designed central station of moderate size produces a horse power hour by the combustion of about 3 pounds of good coal. The electrical horse power hour developed by this coal has 2,565 heat units; we have to balance these 2,565 heat units in the concentrated form against 42,000 heat units existent in the 3 pounds of coal in a more diffused state, and determine whether, for heat purposes, the difference in the form of the energy, with its enormous attendant losses, compensates for the energy lost in bringing the heat units of coal into the higher form of energy capable of economical transmission to a distance.

It is found in practice that the commercial efficiency of the coal cooking range is somewhere between 3 and 6 per cent; these limits are stated by Tyndall. In a recent discussion before the London Society of Engineers, November 6, 1893, Mr. Beaumont gives the efficiency of the cooking range from experiments of his own as 3.7 per cent, or roughly 4 per cent, indicating that of every 27 pounds of coal burned, 26 pounds are thrown away. We have seen that the heat efficiency of the average moderate size central station is about 6 per cent. There is sufficient margin between a heat efficiency of 3.7 per cent and one of 6 per cent to warrant the use of electricity as a source of heat in domestic life, and a further extension with apparatus of larger size and higher working economy would give a still greater margin between coal burned under the boiler and that used in the firepot of the range. Thus with the use of only 1½ pounds of coal per horse power hour he would secure a commercial efficiency of 12.2 per cent or 3.3 times the efficiency of the range.

At the outset, of course, the cost of electrical energy as fuel under average conditions at the power rate will be greater than fuel directly burned. But there are compensating advantages gained which more than offset the additional cost. This has been abundantly proved in actual practice. The saving of attendance, and of time, freedom from dirt, coolness of the kitchen, absolute uniformity of heat and ability to regulate it, appeal at once to the householder. There is merit aside from novelty in such practice.

In industrial work wherever flames are used to secure localized heat, electricity can be advantageously employed. It is more easily regulated than flame, there are no unhealthy products of combustion, the mean temperature of the shop is lowered, the temperatures are constant, the work is more uniform, and the entire system cleaner and more complete. For factory use it is the most desirable form of fuel. In laundries, clothing manufactories, hat factories, silk and all textile fabric mills, shirt factories, rubber goods manufactories, furniture factories, etc., are good fields for the use of electricity for heating. In domestic life no source of heat offers so many elements of value as the use of electricity for cooking and laundry work. There is no discomfort, no noxious gases from combustion, and the temperatures attained are constant, so that the question of the discretion of the cook is eliminated and better results obtained than can possibly be reached from the approximate temperatures of surfaces heated by combustion. It may be fairly stated that people who could afford to do their lighting by electricity could afford to do their cooking and ironing by the same means.

Electricity for heating will be found of the same value to central station electric lighting companies as the use of gas for fuel purposes has proved to the gas lighting companies. Its value lies largely in ability to localize the heat, and it will not be found desirable to use it on a large scale where diffused heat is wanted. High temperatures and small quantities are the proper uses for electricity for fuel.

ADULTERATION.

A GOOD CRUSADE

AGAINST THE RIPENING OF FRUIT IN TENEMENTS.

Six complaints have been made and selected for test cases of Italians who have made it a practice of storing fruit in their dwelling houses, in defiance of the order issued by the Board of Health a month ago. Twenty-one other men have been complained of, but Judge Adams granted warrants and had only six arrested.

Four Chinamen who started to raise hens without permission, have also been summoned to court.

For some years it has been the custom of the poorer class of fruit venders to keep at least a part of their stock in trade at home in the crowded rooms of the tenement house. A glance at one of these rooms under such conditions is not inviting, as almost every available foot of space is occupied by hanging bunches of bananas or by boxes of fruit, usually of oranges or lemons. Under the bed, in the closets, near the hooks laden with the clothes of the family, in dark corners and overhead, the collection of fruit is to be seen or was to be seen until the Board of Health more than a month ago passed an ordinance forbidding the further use of such rooms as a storage and ripening place for fruit.

After waiting a month in order to give the fruit dealers time to make other arrangements, the board has made a house to house inspection in order to learn how the law was being obeyed. In about twenty cases it was found that the old practice was still being carried on, and accordingly it was decided to secure warrants for the arrest of some of the offenders. The statement was made this week that some difficulty had been experienced in securing warrants, but it is expected that some test cases will be brought into court within a brief time. The conviction of a few offenders will probably serve to break up the practice.

The custom of ripening fruit in tenement rooms is censured by the board not so much on account of the fear of any introduction of foreign epidemic as because of more local sanitary reasons. Cholera and yellow fever are not apt to be brought into this city by the means of fruit, so long as good quarantine regulations are kept in operation. The presence of ripening and decayed fruit in large quantities in "living rooms" is believed to be a constant menace to the health of the inmates. There is also at least a possibility that, in the event of a contagious sickness of some members of the family, contagion may be carried to the purchasers of fruit which may be taken out of the room before the case had been discovered by the health officers. These reasons only, if there were no others, would justify some movement against the former practice of storing fruit in tenement rooms, and will serve to secure for that movement public approval.—*New England Grocer.*

THE ADULTERATED MOLASSES.

In New Orleans, recently, some ginger snaps much liked by children were chemically examined, and the ash of the samples found to contain zinc oxides. As the snaps were sweetened with molasses, the chemist turned his attention in that direction, and samples obtained of the same that was used in the snaps. The analysis proved that there were eight grains of zinc to the pint of molasses. Other samples were obtained from different dealers, and six of the fifteen samples analyzed contained zinc. Dealers frankly admitted that zinc was used in bleaching molasses, the materials consisting of bisulphate of sodium and metallic zinc. The zinc and sulphate solution are added directly to the barrel, shaken up, and placed on the market. The color of the molasses is brightened and the material itself is raised several grades. Zinc is a violent poison, and its internal use causes cramps in calves of the legs, nausea and diarrhœa. Measures ought to be taken to stop its use. There is no way of telling except by chemical analysis, whether the molasses sold in that market is pure or adulterated, as the city has no chemist in its employ they are not likely to know.

The New Orleans Board of Health has just issued a circular calling attention to the adoption of a resolution prohibiting the adulteration of molasses, and suggesting that the officials of other cities co-operate in securing the passage of laws in the various States operating in this direction. If such laws already exist, the Board requests the stricter enforcement of the same.

Mr. D. O. Colcott, secretary of the New Orleans Sugar Exchange, has expressed himself as opposed to the action of the health authorities. He said that the manipulation of the staple was carried on by the legitimate trade was not detrimental to the public health in the least. We have the authority of no less a person than Dr. Stubbs, of the Sugar Experiment Station, who says: "That the clearing of molasses performed scientifically is not in the least injurious to health.

"The substances used are sulphate of soda and zinc dust, which by oxidizing remove the obnoxious color and are precipitated at the same time. Should the precipitate be left in the bleached goods, it would simply contain a small amount of glauber salts, which in moderate quantities acts as a laxative, but the person who bleaches properly is careful to leave the precipitate behind and so does no harm, while he who tries to accomplish the same end by dumping a large quantity of the agent into the barrel and then stirring it with a stick ought to go to jail as a poisoner. The crystals are used for improving the brilliancy of yellow clarified sugar, and, used with proper restrictions, is recognized as a lawful agent. So with sulphate of soda and zinc dust for bleaching molasses." The trade of the city are much agitated over the question.

It is known that there is considerable black New York molasses in Boston, but, so far as we know, it comes from New York. So much is there, in fact, that it is said to be interfering with the sale of pure goods. Be that as it may, there is a scarcity at the present time of the best open-kettle New Orleans.

ADULTERATIONS IN ENGLAND.

BAKERS' EGGS.

A man applied at Thames police court on January 30, for a summons for assault against a man of whom he had bought 1,500 eggs for 5s. Finding the eggs were all rotten he took them back, but the man refused to return the money, and broke all the eggs except 600. The stench in the shop, said the applicant, was something fearful. Mr. Mead: Did you examine the eggs before you bought them? Applicant: No sir; he would not let me. Mr. Mead: Well, did not that prove to you that the eggs were bad? Applicant: They are what we call spots, half good and half bad. What do you do with these eggs? Applicant: I sell them to confectioners. Mr. Mead: And do they use them in that condition? Applicant: Yes. The 600 eggs that were not broken I took to the vestry and had condemned. Mr. Mead: I can do nothing in that matter; you had no business to buy bad eggs. As you say he assaulted you when you went to his shop, you have a summons. Since the vestry have been apprised of the condition of these eggs I trust they will summon you, or if not you, I hope they will summon the other man.

HOW SOME CONFECTIONERY IS MADE.

At Marylebone, on January 12, Edmund William Linton, a confectioner, of London street, Paddington, was summoned for having in his possession eggs unfit for the food of man. John Biorn, a sanitary inspector for Paddington, visited the defendant's bakehouse, and found two pint pots nearly full of broken eggs ready for mixing. The eggs smelt bad, and, when Biorn asked what was going to be done with them, either the defendant or his man answered they were going to use them for mixing. Biorn seized them, and, on looking round the bakehouse, saw two other bad eggs and some shells, of which he also took possession. They were condemned by the magistrate, Mr. Cook. The eggs would have been used in the making of Bath buns and sponge cakes. The magistrate fined the defendant £4, with the costs, or seven days' imprisonment.

STARCH AND MUSTARD.

Ann Bicknell, shopkeeper, Hampton Wick, was summoned at Teddington for selling as mustard, an article containing 50 per cent of starch on December 20, 1893. Walter Tyler, inspector under the Food and Drugs act, and Edward Watkins, his assistant, deposed to purchasing a quarter-of-pound of mustard from the defendent on the date named, which she took from a large tin. They informed defendant that the mustard had been purchased for the purpose of being analyzed, and, dividing it into three parts, subsequently submitted one of them to the public analyst, who certified that the article contained 50 per cent of starch. Defendant said she had had the mustard two years, but scarcely ever sold any from the tin, generally selling by small penny tins. She had no idea that the mustard was not pure. Fined 20s., including costs. The bench remarked that defendant had her remedy against those who sold the article to her.

Mr. Charles H Southwell, Ph. C., F. R. M. S., public analyst for the administrative county of the parts of Holland Lincs, has been appointed District Agricultural analyst under the Fertilizer and Feeding Stuffs act for the same county division.

LAGER BEER ADULTERATION.

In a report to the Staffordshire County Council Mr. E. W. T. Jones, county analyst, states that one sample of lager beer was found containing 14 grains per gallon of salicylic acid. Lager beers have had practically no examination for years, and the presence of a powerful drug like salicylic in such a large quantity, seems to show that drinkers of some lager beers are being heavily dosed with dangerous drugs against their knowledge.

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Beef Extracts.—A number of brands of beef extracts have been examined, some of which contain large amounts of sodium chlorid, and in one case considerable potassium nitrate, 22 per cent in all, of the two salts. In about one-half the cases, large amounts of aniline colors were used by the manufacturers to produce the desired colors.

BOOK REVIEWS.

WORLD'S PARLIAMENT OF RELIGIONS.

BY DR. JOHN HENRY BARROWS.

IN TWO VOLUMES—812 PAGES EACH.

J. A. Hill & Company, 44 E. Fourteenth street, New York.

Any one who wants to know all that was done and all that was said at the World's Parliament of Religions held at Chicago, in connection with the World's Fair, needs to possess the report of proceedings and papers of that parliament edited by Dr. Barrows, and now given to the public in two large volumes of 800 pages each.

The congress of religions, though not absolutely the first of its kind ever held, was really the first that was worthy of the name—the World's Parliament of Religions—and will stand out in stereoscopic distinctness as the most wonderful achievement of this remarkable nineteenth century. It will be the parent of many others of its kind as the centuries proceed, their foundations more deeply laid in fundamental, eternal, human hope and more skillfully planned and convened. Already suggestions of similar parliaments are heard in connection with the approaching celebration of the dawn of the twentieth century.

Over a thousand representatives from more than twenty-four different peoples and nearly as many religions were present at the parliament. These volumes present the best thought of the best minds in the religious world of to-day. Read them and you can hear the chimes ring in all the high towers, for one great thing discovered at the parliament was the real sympathy and symphony of all the religions of the world, in some fundamental things and the real unity of feeling among all earnest seekers after truth.

So much theology, philosophy, science, thought of the rarest kind and on the highest themes, and these of universal interest, were never compacted in any other two volumes ever published since the introduction of printing.

Curious speculations are also found in these volumes; the wildest vagaries of thought, the absolute nihilism of faith, the veriest follies of the restless human intellect, the silliest catches at films of faith with the utter dissent from reasonable doctrine.

We wonder why they were admitted into these volumes and sent broadcast over the world. We question somewhat the wisdom of making the good ship of reasonable and reverent faith, the vehicle to carry these idle and worthless dreams. But it shows the true tolerance of the projectors of the idea of the world's parliament of religions, to admit to its platform, doubt and denial posing in the garb of faith and it shows the eminent fairness of the editor and committee to print all the papers presented at that time.

Christianity is presented in these volumes by many learned and profound papers, but the general verdict will be that Christianity did not have as good a showing as she might have had. But how could she expect it, for Christianity, alas, suffers from a spirit of division which tends to separate it, part from part, whenever there is call for grand united action. Perhaps it may be added many representative and learned Christians stayed away from the congress because they doubted its propriety or real profitableness.

Funk & Wagnall's Standard Dictionary of the English Language. Vol. I.

Volume I of Funk & Wagnall's Standard Dictionary of the English Language has been received. The work will be in two volumes and is expected to be completed by June of this year. It is sold by subscription only, and the price varies according to binding from $12 to $22. There will also be an edition in one volume. Funk & Wagnalls Company, 18 Astor place, New York, are the publishers.

It does not seem to come within the province of a journal like the American Analyst to undertake a critical review of a work of this kind, but the statements of some interesting facts about this important work, we are sure, will interest our readers.

The work was over four years in preparation and there were engaged on it 247 editors and specialists, besides nearly 500 readers for quotations with several hundred other men and women working at definitions; over half a million dollars were expended in its preparation, and it will take several hundred thousand dollars more before the entire work is finished. To give an idea of the magnitude of the work and also to what proportions the English language has grown, we find that the number of words and phrases under the letter A and under the entire alphabet, compared with other dictionaries, is as follows:

	UNDER A.	ENTIRE ALPHABET.
Johnson's	2,886	45,000
Worcester	6,983	105,000
Stormonth	4,692	50,000
Webster	8,358	125,000
Century	15.621	225,000
Standard	19,736	300,000

Among the peculiar features of this dictionary are that preference has been given to the order of usage over the historical order, where a word has two or more meanings. In giving the pronunciation of words the scientific alphabet of the American Philological Association has been used.

Disputed spellings and pronunciations have been referred, under the direction of Professor March, to an advisory committee of fifty philologists in American, English, Canadian, Australian, and East Indian universities, and representative professional writers and speakers of English.

If a word in the vocabulary has more than one pronunciation, the one first given is that preferred by the Standard; those that follow are from other dictionaries. In the spelling of names in geography, the decisions of the United States board on geographic names have been followed. That there is a drift conservative yet real toward the simpler forms of spelling, has been recognized throughout the work. The spelling of many words in chemistry has been simplified, as bromin, morphin, quinin, sulfur. This has been done in compliance with the wishes of the Chemical Section of the American Association for the Advancement of Science. The places of quotations used to verify or illustrate the meanings of words have been so indicated that they can be easily found. Great care has been exercised to avoid the recognition of needless new literary terms. Each set of words has been defined or passed upon by a representative of the science or art, or of the handicraft, party, or class, or religious denomination, to which the terms respectively belong. In the vocabulary, only proper names or proper terms derived from them have been printed with initial capital letters. By a system of grouping applied to the names of fruits, flowers, coins, weights and measures, the facts concerning this class of words have been given very great fullness. For the first time, it is thought, in dictionary making, an attempt has been made to reduce the compounding of words to a scientific system. To avoid the confusion that often arises, especially in a dictionary, by using the hyphen for the division of both compound and simple words, the German double hyphen has been used in hyphened compounds. The pictorial illustrations have been made especially for this work.

Mr. Frank H. Vizetelly, in *Home and Country* for December, under the title of "The Journey from A to Izzard," tells us how a dictionary is made, and describes the making of the Standard Dictionary for that purpose. From this article we quote:

The most important, and at the same time most difficult, task in making a dictionary, is the preparation of the definitions. Thirty-five definers, not counting "outside specialists," have been steadily engaged on the "Standard," of whom a number are "inside specialists," selected to treat particular classes of words belonging to the various sciences, obsolete words, and other subjects. One specialist has had in charge the compounding of words, a subject about which not a few know but very little. To a competent man has been intrusted a special department for synonyms and antonyms. A definer is handed at one time four packages each containg twenty-five cards, on each of which is a single vocabulary word. With dictionaries—usually seven in number—before him, with cyclopedias and other reference books within easy reach, he is expected to create a definition, comprehensive, correct, yet concise.

When a definer's work is done, so far as the bare definition is concerned, it is subjected to a critical examination by a "reviewer," an expert lexicographer, whose duty it is to see that no important or significant ideas are omitted, and who has power to strengthen a definition, in style, construction, or otherwise, bearing in mind the maxim laid down by an eminent authority, that a word should always be so defined as to exhibit the meaning, or the different meanings, in which it is used by good writers.

As many as six galley proofs are "passed" before the order is given to make into pages. The pages are proven two or three times, sometimes more often, before they are electrotyped. Here one would think the work ends, and yet when the proofs of the plate pages are sent out to the specialists, it is no uncommon thing for these gentlemen to return them with corrections, bearing the very last information, that bring the definitions up to date. Of course this necessitates the partial, and sometimes the entire remaking of the plates, but on the other hand, it is beneficial, for it is only by this means that absolute perfection is attained.

And what next, and next? Why, that which it most essential to the production of a book, the printing, the critical examination of the press-proofs, and the binding. Each of these calls for the exceptional effort and the particular care that must be necessary antecedent of the mechanical perfection.

After contrasting previous methods of dictionary making with those obtaining to-day, the author closes what has proved to be a highly interesting sketch with these words:

"From the time of Johnson's small beginnings through the stagnant and barren half century, the end of which saw Webster's work begun; through the twenty years during which he read for it and framed it; to the time when Worcester wrote, and the 'Imperial' made its English name; to the later day when the 'Century' adopted and enlarged the latter work, and developed from that basis the grand achievement of the largest English speaking encyclopedic dictionary the world has known; to the present, when a new work, the 'Standard' is unfolding itself as the most comprehensive dictionary of the time—the conditions of labor under which lexicographical work has been performed have improved, and lent that faculty to execution which has resulted in such excellent attainment and meritorious performance."

Before, however, the definition is handed to the "reviewer," there are pinned to it the quotations intended to illustrate the various meanings of the word. These quotations, selected by a large staff of readers, have been verified and edited by the quotation department, and the place from which each quotation is taken is exactly indicated. To make a satisfactory selection of, say from 100 to 150 quotations for each sense of a word, is not an easy task for the reviewer, and requires a thorough knowledge of English literature. The reviewer stamps his initials upon such of the quotations as he thinks fit to insert, whereon the cards upon which all manuscript work has been done are taken to the "pasting" department in charge of two young women whose duty it is to paste the quotations at the side of the particular definition to which they refer. Each package in this form, then goes to the typewriters, eighteen of whom are kept at work writing the contents of the cards. To the typewritten matter the etymologies are now attached, and after this is proof-read, it takes the place of the package, and is held for final revission—a process occasionally requiring much labor from the associate editors.

Final revision completed, the work is turned over to the "form" department, which is responsible for the style that the definitions, once set up will assume. Here matters of detail are of the greatest import, and involve heavy responsibilities, the chief of which is to make sure that the popular sense of a word obtains precedence, and again the definition undergoes severe criticism.

From the hands of those responsible for the "form," the "copy" is transfered to the printing office, where its number is registered, and it is distributed among the compositors. A number of printing office proofs are struck, and the last of these, bearing the proof-reader's queries and accompanied by the copy, is sent to the editorial rooms. After the necessary corrections have been made by the editors, a set of revised galley proofs are sent to the editors engaged on the "Standard," together with nearly 200 proofs for the "correspondence" department. The latter are sent by that department over all the world, to the various specialists. When these proofs have been corrected and returned by the specialists, they are passed to those employed in the "transcribing" department. To them is given a duplicate galley proof, pasted on a blank sheet of imperial paper, and upon the margins of this sheet each specialist's corrections are transcribed. The sheet is then examined carefully by an experienced critic, and by him transferred to the associate editors for general criticism and elimination of superfluous quotations. This done, the sheet journeys in turn to the illustration department, where the engravings that are to embellish the work are added. Thence it finds its way to the "compounder" and proof-readers, and afterward it comes under the critical eye of the managing editor, to be supervised finally by the editor-in-chief.

Thus it will be seen, there has been produced a valuable addition to the dictionaries of the English language, and it needs no prophet to foretell that the Standard, as a type of a long stride in advance in this line will be in the hands of all who desire a reliable, erudite and handy book of reference, and it necessarily will be some years, at least, before any further progress in this direction will be made. The exhausting of the very large first edition of the work before it was published, by advance orders, proves this.

LITERARY NOTES.

THE EASTER NUMBER OF "THE LITERARY DIGEST."

The whole world has been traversed to find material for the Easter number of *The Literary Digest*. Almost every civilized language will be represented. It will be superbly illustrated, full of information; treating all questions of present interest, and all sides of those questions; presenting the leading articles in the foremost magazines and journals of the world. This number of *The Literary Digest* will probably excel any other attempt to give the literature of the world in one issue. The Easter number will be ready on Thursday, March 22.

"An Anatomist's Anomaly Blank" designed for the use of dissectors in recording any noteworthy anomaly that may be found, is a praiseworthy device of Dr. A. Hewson, of Philadelphia. The sheet has proper spaces for the student's name, the principal normal physical characteristics of the subject, and for anomalies of each of the principal organs or classes of tissues, in proper order and sequence. The proper recording of the anatomic peculiarities occuring in the thousands of dissections made in the country would eventually result in interesting and valuable scientific lessons. Published by P. Blakiston, Sons & Co., Philadelphia, 1012 Walnut street.

A CURIOUS RELIC.

An English newspaper recently published, as a curiosity of medical practice in the olden time, a prescription for the relief of "spring-time languor," which contained as ingredients no less than fifty-three simples. All were of vegetable origin. A few are still mentioned in the pharmacopea as supposably possessed of mildly alterative properties. Many more bearing local names are no longer recognizable. Others seem to have been employed for certain mystic virtues imparted by gathering them at particular phases of the moon, or upon Saint Thinguiny's Day, or Saint What's-her-name's eve. Modern science has no more respect for such occult influences than it has belief in the tradition that the mandrake shrieked when pulled from the ground. It is worthy of remark, by the way, that the formula of fifty-three components was prepared by one of the most eminent physicians of his time—a little over an hundred years ago—and not the work of a charlatan or some moon-struck old woman.

The tendency of modern curative science is toward the simplification of remedial agencies, the selection of drugs most potent in clearly definable specific action upon certain tissues or individual organs; employing them singly where practical and only combining them in such cases as demand simultaneous action upon different organs for attainment of given results by their combined action. But this is by no means so simple a matter in application as to the wholly uninitiated it may appear. All medicines are not susceptible of combination. Sometimes, two which are separately harmless, or even beneficent, when mixed together become actual poisons in their united effect. Others, when mixed, neutralize each other. This is one of the reasons why it is positively dangerous to swallow some of the nostrums offered to the public as "nerve tonics," "dyspepsia cures," and above all, "blood purifiers." Where they are not simply worthless they are apt to be deleterious and the directors of the Chicago World's Fair were wise in turning the search-light of science upon them and rigidly excluding from that exhibition all blood purifiers but Ayer's Sarsaparilla. This particular preparation has an established and unassailable right to be regarded as a standard officinal preparation; and there can be no question of its deserving the extraordinary tribute to the merit thus accorded. From the time it was first brought out by Dr. J. C. Ayer—half a century ago—there has been no mystery about the composition of this preparation. The formula by which it was prepared and samples for analysis and trial were sent to every reputable physician in this country and Europe, and have ever since been at the command of the medical profession. Consequently, it is habitually prescribed by a vast number of physicians as the most potent and reliable of all blood alteratives. And their judgment upon its value finds endorsement in the practical experience of the civilized world. There is as much difference between Ayer's Compound Extract of Sarsaparilla and the myriads of its imitations, counterfeits and would-be rivals, as between pure gold and any yellow alloy of base metals. It is a medicine which gives tone to the stomach, cleanses and invigorates the liver, stimulates and strengthens the kidneys, regulates the bowels, and, by beneficent action upon all the organs of digestion, assimilation and excretion, purifies and enriches the blood. Without good blood there can be no healthful life, or indeed life of any sort for any considerable length of time. And the "spring-time languor" was never so well conquered by the prescription of fifty-three ingredients, or by anything else, as by Ayer's Compound Extract of Sarsaparilla.

◆

There would be little work done in this world, and much less sight-seeing, were it not for the satisfaction in talking about one's accomplishments.

"Was'nt Cholly's marriage rather sudden?"

"Yes, he found that a longer engagement would break him."

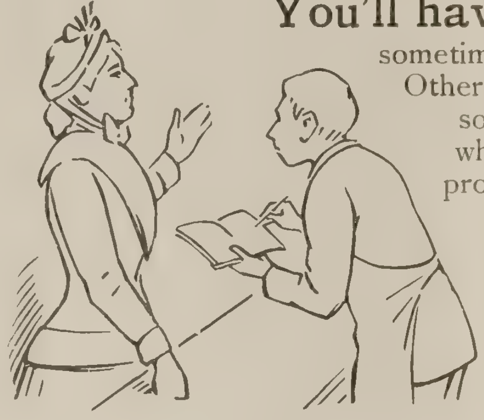
◆

HOW'S THIS?

We offer One Hundred Dollars reward for any case of Catarrh that cannot be cured by Hall's Catarrh Cure.
F. J. CHENEY & CO., Toledo, O.

We, the undersigned, have known F. J. Cheney for the last fifteen years, and believe him perfectly honorable in all business transactions and financially able to carry out any obligation by their firm.
West & Truax, Wholesale Druggists, Toledo, O.
Walding, Kinnan & Marvin, Wholesale Druggists, Toledo, O.

Hall's Catarrh Cure is taken internally, acting directly upon the blood and mucous surfaces of the system. Testimonials free. Price, 75 cents per bottle. Sold by all druggists.



You'll have to Insist, sometimes, upon getting **Pearline**. Otherwise, grocers may give you some poor imitation of it, which pays them a larger profit, but which it will not pay you to use.

It isn't enough to order **Pearline**. See that you **get** it. It has grown into favor so rapidly that it has not only brought out a host of imitations, but it has led people to call any powdered soap, washing-powder, or so-called washing compound—anything in the way of a powder for cleansing purposes—**Pearline**. This is all very flattering to **Pearline**, but if it's these imitations that you've used, you can't be enthusiastic. 402 JAMES PYLE, New York.

Indigestion

Horsford's Acid Phosphate

Is the most effective and agreeable remedy in existence for preventing indigestion, and relieving those diseases arising from a disordered stomach.

Dr. W. W. Gardner, Springfield, Mass., says: "I value it as an excellent preventative of indigestion, and a pleasant ascidulated drink when properly diluted with water and sweetened."

Descriptive Pamphlet free.
Rumford Chemical Works, Providence, R. I.
Beware of Substitutes and Imitations.
For Sale by all Druggists.

MISCELLANEOUS.

SPONGES—THEIR STRUCTURE AND LIFE HISTORY.

It has now been definitely proved that the sponge is an animal, as it contains no cellulose, and requires organic food. It is a compound body, and the sarcode, or living part of the sponge, appears to the eye as a soft gelatinous substance, which, however, is seen by the microscope to consist of an aggregation of simple animals possessing an endodermic, ectodermic, and mesodermic layer. This living portion is supported on a horny skeleton (the commercial sponge) which is composed of substance called keratode, spongin or keratin, chemically allied to silk. Most sponges possess some kind of skeletal structures. They may be calcareous, or silicious, or horny scleres, the latter usually having the form of fibres, which sometimes enclose silicious needles (spicules) or foreign bodies. Foreign bodies sometimes form part and sometimes the whole of the sponge skeleton. The spicules of calcareous sponges consist of carbonate of calcium. Each spicule, so far as its mineral compound is concerned, is a single crystal. On the other hand, its general structure is organic. Its surfaces are curved, and it usually has the form of a cone or a combination of cones, each of which consists of concentric layers of calcite surrounding an axial fiber of organic matter. The spicule sheath consists of a thin outer layer of organic matter and can be readily seen by removing the calcite with a weak acid. Spicules may be obtained by cutting sponge into thin slices and soaking it in liquor potassae to dissolve horny skeleton. Silicious spicules consist of colloid silica or opal. Spicules differ greatly in form, size and use. They may be divided into two groups—minute flesh spicules, supporting a single cell, and larger or skeletal spicules, contributing to the formation of skeleton. In some sponges the scleres are simply scattered through the mesoderm, and do not give rise to a continuous skeleton. British sponges contain a lot of silicious matter. The crater-like opening on the top of sponges are osculae, or exhalent apertures, and the very small holes in the sponge are the pores or inhalent apertures. The simplest sponge we know consists of a flask-shaped body with a large internal cavity and one crater-like opening at the top. It is covered with pores through which the water is absorbed, and ejected from the terminal crater. On dissecting it we find canals running through it from the surface to the central cavity. Here and there in these openings we find dilatations, each of which is lined with cells having hairs pointing outwards, called ciliated chambers. These are for breathing purposes, by directing the water into currents. The presence of one or more contractile vacuoles in flagellated or ciliated cells suggests that they expel water, urea and carbonic acid. Also this current provides food for the sponge in the form of particles of animal and vegetable matter, which are absorbed by the sarcode. The sarcode, or living outer and inner glutinous covering of the sponge skeleton, is possessed of a rudimentary nervous system, which enables it to close the pores and suspend the process of inhalation andinhibition.

Fresh individuals arise by a sexual germination, by fission and by true sexual reproduction. In the latter case the new individuals are produced from the union of ova and spermatozoa, which develop from wandering amoeboid cells in the mesoderm. The little germinule thus formed is a yellowish capsule covered with cilia, and is ejected from the oscula, floats away from the parent sponge and attaches itself to any suitable neighboring object, as a stone or rock, where it grows. Artificial fission has been practiced with success in the cultivation of sponges for the market by the Italian government, but the experiment had to be abandoned on account of the hostility of the sponge fishers. Fxperiments were also made in Florida.—*British and Colonial Druggist.*

RAISED THE PRICE OF TAPE.

"The very best story I ever heard," said John Thomas to the corridor man at the Laclede, "is vouched for by Captain Rivers of the Fort Worth & Denver Railroad. A Russian Hebrew came to this country and established a dry goods and notion business. He was so successful that he sent for his younger brother and started to educate him in the business. The boy was slower to learn the ways of the world than his brother had been and the latter sometimes grew impatient. One day he said:

"Now, schust vait und see how I do. Dere vas a lady.'

"The lady asked to see some silk, which was shown, a piece at $2 a yard.

" 'But I saw some like it a few days ago for $1.50,' she said.

" 'I dond doubt it, madam; but dat vas some days ago. I vas selling dese goods at dot price until yesterday, ven we got vord dot all de silkworms in China vas dead, und dot goods vill cost us more as $2 now."

"The lady was satisfied and bought the silk.

" 'Now, you see how that vas done? Dere vas a lady, now; you vait on her,' he said to his brother.

"The lady entered and asked for tape. The young man was all attention and the desired article was speedily produced.

" 'How much?' the lady asked.

" 'Ten cents a yard.'

" 'Why, I saw some for 8 cents.'

" 'I dond doubt, madam; but dot vas some days ago. Shust to-day ve heard dot all the tapeworms vas dead, und dere vould be no more tapes less a 20 cents a yard."—*Globe Democrat.*

NEUROSINE THE MOST POWERFUL NEUROTIC ATTAINABLE.

ANODYNE AND HYPNOTIC.

A reliable and trustworthy remedy for the relief of Hysteria, Epilepsy, Neurasthenia, Mania, Chorea, Uterine Congestion, Migraine, Neuralgia, All Convulsive and Reflex Neuroses. The remedy par excellence in Delirium and Restlessness of Fevers.

FORMULA: Each fluid-drachm represents 5 grains each, C. P. Bromides of Potassium, Sodium and Ammonium, 1-8 grain Bromide Zinc, 1-64 grain each of Extract Belladonna and Cannabis Indica, 4 grains Ext. Lupuli and 5 minims fluid Ext. Cascara Sagrada, with Aromatic Elixirs.

RICHMOND, VA., Sept. 29, 1891.

I prescribe NEUROSINE in the class of cases for which it is indicated, daily, and with satisfactory results. It completely relieves restlessness in Fevers.

Landon B. Edwards

Ed. Virginia Medical Monthly.

MEMHPHIS, TENN, Feb. 6, 1892.

I obtained happy results from the use of NEUROSINE. It is certainly the best neuralgic medicine I have used. I have tried it in some cases of Trifacial Neuralgia, after having tried some of our most powerful remedies. None acted as well as NEUROSINE.

Editor Memphis Medical Monthly.

MEMPHIS, TENN., Jan. 7, 1891.

I have obtained entire satisfaction from the use of NEUROSINE in cases of Neuralgia.

Dean Memphis Hospital Medical College.

CHATTANOOGA, TENN., Sept. 6, 1891.

Having used NEUROSINE in a number of cases I must say the preparation has given better results and more universal satisfaction than any other combination ever used by me. Have tried it in many nervous affections, in some it is a specific, in others a therapeutic agent of very great value.

W L Gahagan

Coroner of Hamilton County.

McKENZIE, TENN., Feb. 12, 1891.

NEUROSINE had such a happy effect in a case of Neuralgia or Congestive Headache, in which I tried it, often having failed on other things of similar nature. The case was one of long standing Sick Headache of peculiar character. The lady, three days after confinement, without any fever, took severe headache. NEUROSINE relieved her immediately.

R D Ervin

FOURCHE ARCUAULT, MO., March 29, 1892.

I sent about two tablespoonfuls of NEUROSENE to an old lady, aged 84 years; she had been complaining for some weeks with Headache and Neuralgic pains all over her body more or less. She took that small amount and has been quite free from pain ever since, went to church in a farm wagon, 1½ miles, rough road, and is still free from pain and sleeps and eats better. I am well pleased with it.

U. H. JOHNSON, M. D.

DOSE: From one teaspoonful to a tablespoonful, in water, three or more times daily, as may be directed by the physician.

Supplied in Eight-Ounce Bottles.

To any Physician, unacquainted with the medicinal effect of Dioviburnia and Neurosine, we will mail pamphlets containing full information, suggestions, commendations of some of the most prominent professors in medicine and various methods of treatment. Or to those desiring to try Dioviburnia and Neurosine, and will pay express charges, we will send on application a trial bottle of each.

DIOS CHEMICAL COMPANY, ST. LOUIS, MO.

PERFUMES AND PERFUMERY.

Ladies who devote some study to the selection of delicate perfumes, and have by temperament and practice become connoisseurs in the detection of subtile and delightful odors, will be gratified to learn that this faculty is a preservative of health. When the cholera prevailed in Paris and London, all the people engaged in the work of preparing perfumes escaped its ravages, and when the Dutch destroyed the spice trees on the island of Ternate, the colony suffered from epidemics and diseases previously unknown. So those accustomed by the culture of their sense of smell to use perfumes not only find in the perfume itself a prophylactic against some forms of disease, but are themselves enabled acutely to detect the presence of noxious and poisonous atmospheres.

The increasing use of perfumery in commerce has enriched many parts of the world, and France, India, Turkey, and Italy today enjoy a handsome revenue from the sale of flowers and materials cultivated exclusively for this industry. It is believed by experts, notably Mr. R. S. Cristiani, of Philadelphia, that the United States is entitled to compete with these countries in the production of the articles used in perfumery. There are many sections of our country where flowers could be raised on a large scale, and capital inducements offered to enterprising men to start a new venture of this sort, where success means fortune. From the earliest times perfumes have been popular among the priests and administrators of religious rites, as they have used incense at the worship of their deities. In those ancient days the Egyptians, as in most other things, preceded the rest of the world in the use of perfumes, and from them it passed to Assyria, Greece, Rome, Arabia, and Turkey. The Asiatics, attracted by their luxurious tastes to all sorts of sensuous indulgences, found perfumes a necessary accessory in their daily pleasures. Nineveh and Babylon, according to Herodotus, consumed such enormous amounts of perfumes that, besides the production of their own country, they obtained from Arabia "a thousand talents of frankincense."

Alexander found among the spoils in the camp of Darius quantities of essences and cosmetics; and the Romans and Greeks used perfumes, and the many ointments into which they entered, most lavishly. The Orientals are addicted to musk, whose powerful odor has for them a great attraction. To such extent is the love of perfumery carried, that there is said to be a mosque the mortar of which is mixed with musk, so that its walls become fragrant when the sun shines upon it, and the air of this temple becomes itself steeped with this penetrating scent.

Perfumes became fashionable in the reigns of the great kings and queens, and Elizabeth, Queen of Hungary, is said to have invented the famous Hungary water, by the use of which she retained her beauty until she was past seventy years of age. Perfumery exists among all races, and ranges from the Australian and Esquimaux, whose taste is vulgar and low, to the highest delicacy of perception in a Beau Brummell.

Mr. Cristiani, in his valuable work on perfumes, from which the above facts are culled, tells us that, though we obtain valuable perfumes from the East, the south of Europe is now the only reliable source of supply—Cannes, Grasse, and Nice being the principal seats of flower culture. Cannes excels in the culture of the rose, cassia, jasmine, and tuberose; Nismes in rosemary and lavender, Nice in violet and mignonette, and Sicily in the citron and orange. British India gives us cinnamon, cloves, patchouly, santal, ylang-ylang, and odoriferous gums and spices. China yields musk, civet, and ambergris. England furnishes lavender and peppermint, for which its moist climate is peculiarly adapted, while we are indebted to Italy for the citric odors, as lemon, bergamot, cedrat, limette, neroli, etc.

It is interesting to note that the odors of plants exist in different parts of them, sometimes in the wood, as in cedar and santal; sometimes in the leaves, as in patchouly and thyme, in the seeds, as in caraway and tonquin, in the bark, as in cinnamon and cascarilla, and in the roots, as in orris and vitivert. Some plants yield more than one odor. Thus the orange has three—one from the flowers, called neroli, one from the leaves, called petit grain, and another from the rind of the fruit, called portugal or orange. Perhaps the most striking and surprising method adopted for extracting the perfumes of flowers is that entitled enfleurage, wherein the flowers are simply planted in grease trays and allowed to remain until all of their delicate perfume has been abstracted and imparted to the oil or fat in which they are immersed, fresh flowers being added until the fat has become saturated with the aroma of the plant.

The celebrated attar of rose is made in Turkey and India, where very extensive rose farms are situated, as at Adrianople, Uslak and Ghazipoor.

Among the numerous perfuming materials used, the following appear to deserve mention in a cursory notice, as the most interesting in their associations, or from the singular fact that, while recognized as perfumes, they are not cultivated for the extraction of their aroma, but simply imitated by suitable compounds.

Ambergris is a secretion of the sperm whale. It is found floating on the sea along the coasts of China, Japan, and Greenland, and for a long time was thought to be fossil amber, from which its name is derived (ambergris), gray amber. Mr. Cristiani remarks that, while not possessing an agreeable odor itself, it imparts, with other perfumes, a remarkable fragrance.

Heliotrope, though immensely popular as a perfume, is imitated by perfumers by a mixture of rose and vanilla, not being expressly cultivated for the purpose of extracting its perfume.

Honeysuckle is another perfume imitated by the perfumer, and deservedly popular.

Lavender is grown extensively in England and France, and its oil is extracted by distillation, the English product being much superior.

The lily, the magnolia, the pea, are all successfully imitated, and it is doubtful whether their admirers ever suspect that they are not enjoying the fragrance of the flowers themselves.

Musk, the powerful odor which evokes so much disgust among some, is invaluable to the perfumer, entering into many preparations. It is a secretion of an abdominal gland in the musk deer. The best quality comes from Tonquin. It is an unctuous substance, reddish brown in color, with a powerful and penetrating smell, which, ameliorated by combination with other odors, forms admirable compounds.

The rose affords the perfumer his most valuable material for the preparation of innumerable extracts and bouquets, while the dried leaves enter into powders and pastilles.

The vanilla is the bean of a handsome vine, and, made into a tincture, it enters into a great number of extracts. It grows in Mexico.

The violet is the most expensive of all flower perfumes, from the smallness of the flower, but it furnishes the most exquisite fragrance, and is justly sought for with avidity. Large farms are devoted to its cultivation at Nice and Florence.

We have just touched, under the guidance of Mr. Cristiani, this wide field of technical research. The subject is one of the most entertaining interest, and one which most of the readers of this paper will realize as extremely novel.

FOR WEAK NERVES

Use Horsford's Acid Phosphate. It is particularly useful in making weak nerves strong, as it contains necessary elements of nutrition for the nervous system, obtained from natural sources.

Dr. W. W. Gardner, Springfield, Mass., says: "I value it as an excellent preventative of indigestion, and a pleasant acidulated drink when properly diluted with water, and sweetened."

Fond Parent—Yes, Bobby, the Angel of Death passed over the houses and smote the first born of each Egyptian family.

Bobby (after a moment's silence)—Pop, what did the angel do when it was twins?—*Harlem Life.*

Mamma (to little Jimmy who is saying his prayers)—Now, Jimmie, ask God to bring papa home safely.

Jimmy—Please, Dod, bring papa home on a safety.

The Best Food For Children? is worthy every parent's study; not only what they can eat, but what gives the most nourishment. No children are better, and most are worse, for eating lard-cooked food. If, however, their food is prepared with the healthful new vegetable shortening,

COTTOLENE

instead of lard, they can eat freely of the best food without danger to the digestive organs. You can easily verify this by a fair trial of Cottolene. Sold in 3 and 5 lb. pails by all grocers.

Made only by
The
N.K.Fairbank
Company,
Chicago, Boston, New York, St. Louis, Montreal, Philadelphia, San Francisco.

SCIENTIFIC SLAUGHTERING.

Very few people have any idea what rigid economy is practiced at the great slaughtering plants. Scientific men are constantly cudgeling their brains to devise valuable chemical properties and new compounds in materials heretofore wasted or imperfectly utilized, says the *Drovers' Journal*.

The cross roads butcher who kills a few animals a week, throwing away a large part of the offal, must make a large profit on the meat sold, but modern utilization of by-products makes it so the slaughterer who does business on a large scale could much better afford to sell the meat without profit than to waste what the old-fashioned small butcher could not utilize.

The packing business as at present carried on utilizes a great number of products which were formerly allowed to go to waste. For instance, the stomach of hogs, instead of being sent to the rendering tanks, are now used for the manufacture of pepsin. Pigs' feet, cattle feet, hide clippings and the pith of horns, as well as some of the bones, are used for the manufacture of glue. The baunches of the cattle are cleaned and made into tripe. The choicer parts of the fat from cattle are utilized for the manufacture of oleo oil, which is a constituent of butterine, and for stearine. Large quantities of the best of the leaf lard are also used for the manufacure of what is known as "neutral," also a constituent of butterine. The intestines are used for sausage casings; the bladders are used to pack putty in; the undigested food in the cattle stomachs is pressed and used for fuel; the long ends of the tails of cattle are sold to mattress makers, the horns and hoofs are carefully preserved and sold to the manufacturers of combs, buttons, etc. Many of the large white hoofs go to China, where they are made into jewelry. All of the blood is carefully preserved, coagulated by cooking with steam, then pressed and dried and sold to fertilizer manufacturers. All of the scrap from rendering operations is carefully preserved and dried and sold for fertilizers. Bones are dried and either ground into bone meal or used for the manufacture of bone charcoal, which is afterward utilized refining sugar and in some other refining processes.

WHERE COTTONSEED OIL GOES.

The disposal of the immense output of cottonseed oil will interest those who are not familiar with this rapidly growing industry and the many uses that have been found for this most useful of all vegetable oils.

The question is frequently asked, "What is cottonseed oil used for?" Last year there were probably 1,250,000 tons of seed crushed. Out of this seed there were obtained about 1,000,000 barrels of oil.

At Chicago not less than 300,000 barrels are used for making lard. At St. Louis, Kansas City, and Omaha about 200,000 barrels are used in making lard.

The lard is made by mixing beef suet with cottonseed oil, the degree of hardness of the product being determined by the relative proportions of the oil and suet. It is notable that in much of the lard there is no hog product at all.

About 20,000 barrels are used on the coast of Maine to pack sardines.

Probably 50,000 to 100,000 barrels are used by the soap makers for making toilet soaps.

Some 200,000 to 300,000 barrels go to Rotterdam, Holland, for making butter. Large quantities go to Marseilles, France; Trieste, Austria; and various points on the Mediterranean coast, especially in Italy, for mixing with olive oil.

The poorer grades are used for illuminating purposes in mines, as a lubricant in cutting threads on pipes and bolts, and other purposes.

It is not a good lubricating oil, because it contains too much gum. Much money has been expended trying to find a process of refining that will eliminate the gum.

Of late years much oil has been shipped to Mexico and South America. In these Latin countries it is used as a cooking grease, without the necessity of disguising it as lard by using beef suet with it. In fact, most of the people of the earth prefer a clean vegetable oil for cooking to American fats. The Anglo-Saxons and Germans are notable exceptions.

Its use in an unadulterated condition in America as a cooking grease is rapidly increasing, especially in Texas and New England. All the restaurants in Houston, Galveston, and other Southwestern cities, and in Boston, Providence and other New England cities, keep pure refined cotton oil on hand at all times. In Boston the physicians uniformly prescribe food cooked in cotton oil as a remedy for indigestion, and the idea has grown very popular, especially in Boston and the adjacent towns and cities.—*Charlotte Observer.*

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G. P. Curtiss of S. Wilmington, Conn., writes as follows: "The **Free** sample books, papers, etc., I received from the 500 firms mentioned, if bought, would cost me $25.00 to $40.00. Am delighted."

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HOW BEET SUGAR IS MADE.

When the farmer brings the result of his season's toil in the beet fields to the factory the beets are first weighed and then stored in long sheds. As the beets are required at the factory they are thrown into a shallow sluiceway, which runs from the sheds to the factory and enables the roots to float from the point where they are received to the place where they are needed. They are taken from the sluiceway by a wheel elevator and dropped into a washer, which is a trough-shaped contrivance, with revolving arms. The beets are then thrown out automatically into a bucket elevator, which conveys them to the top of the building, where the cutter is located. This machine cuts the beets into slices about ⅛ inch thick, 3-8 inch wide and of various lengths. The sliced roots now pass from the cutter through a revolving chute into the great circular diffusion battery. This consists of twelve wrought iron cells, each holding about 126 cubic feet, and having an open manhole on top with swinging cover. The bottom is arranged to open and close by hydraulic pressure.

It is in this diffusion battery that the interesting process of separating the saccharine matter from the beet is performed. This is done by the use of water heated to a certain degree, from which it must not vary. As the water pours through the cells for the first time it carries with it about one-half of the saccharine matter, while the other half is left in the beet. The hot water is turned on ten times in succession, each time taking more of the sugar, until at last it has extracted all but 1-8 of 1 per cent of the sweetness which the summer's sunshine has stored in the beet. The juice now flows to an automatic register, which registers the quantity and temperature of the juice and draws out a sample for use in the laboratory. From the register it passes to a heater which is heated to 90 deg. Centigrade; and it then passes into the carbonators or clarifying pans, where a portion of the impurity is removed from the juice by the application of lime. Fortunately the majority of the impurities combine with this substance and settle at the bottom of the pan. The sucrate of lime is decomposed by pumping carbonic acid gas through the liquid, which forms the excess of lime into carbonate of lime. When this operation is completed, the whole contents of the carbonator, 180 cubic feet of juice, or 1,350 gallons, are pumped by means of a plunger pump, having a capacity of 8,000 gallons per hour, through a mammoth filter press. This removes the residue of the clarification, the juice being treated twice with carbonic acid and once with sulphurous acid. In the last process all of the lime is removed.

The diluted liquid is now concentrated in a quadruple effect evaporator to a 50 per cent solution. From here there are two operations. To make the very finest quality of sugar it is necessary to run it over bone-black which removes impurities that cannot be taken out any other way. After this process the liquor is as clear as water, and the juice is then boiled into sugar in a vacuum strike pan. This is a closed kettle 10 ft. 6 in. in diameter and 23 feet high, and holds thirty-five tons of sugar. In this kettle the sugar is granulated and forms a product technically termed melada, a mixture of molasses and sugar, 75 per cent of the latter. The sugar is then dropped into a mixer, which holds the entire contents of the kettle. The next step is to remove the syrup, which is done with Weston centrifugals. The sugar is then partially moist and the moisture is removed by passing the product through a Hersey sugar dryer. It then passes perfectly dry into sacks, each of which holds exactly 100 pounds. Here samples are taken, weighed and marked by the internal revenue officials, and then at last we have the finished product.

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COOKING AS A SCIENCE.

The New York *World* says that there is a delightful prospect that scientific cooking may become a fad. If it does, and the ladies take it up in earnest, there will be hope that dyspepsia will diminish and the frying pan cease to be the American housewives' coat of arms. Women are talking about cooking, several are lecturing on the subject, volumes on the subject are being printed and no family newspaper is considered complete without a column devoted to receipts and directions for cooking and the kitchen seems in a fair way to become a sort of scientific laborratory, presided over by enthusiastic women necromancers.

Some of the present celebrated scientific cooks confess to a most woful ignorance on the all-important subject at the time "they were married." And the older ones declare that "in their day" there were no books fit to study upon the subject of cooking, as chemistry had not yet been applied to the art. One scientific cook confesses to having experimented on feeding her husband, but declares that the experiment proved a success, as his dyspepsia vanished. She says the first knowledge she acquired was the art of making the baker's best bread. And then somebody else says that she is glad that she says "their best bread" for most of the baker's bread in this country is atrocious—an insult to a self-respecting stomach.

This same person tells about the art of bread-making, which she declares is to "bring fermentation to the proper point, and there arrest it. If carried beyond that point the size of the loaf is greatly increased, and nutrition and quality are deteriorated in the same proportion. For this bakers are not to blame. Women insist upon size, knowing nothing of quality.

"There it is—ignorance. I see women putting bread into the mouths of their families which is nothing more or less than slow poison. It's dreadful. Chemistry teaches us that when flour, water and yeast are mixed and held at a proper temperature, the dough becomes perfectly light in five hours and ready for the oven. If baked at once the bread contains all the nutrition in the wheat. When it is subjected to ignorant treatment it loses four-fifths of its quality and many times becomes poison."

Britons, the writer concludes, have reason to be thankful, as only professionals make bread in England, or anywhere else in Europe. But she distinguishes a difference between English and Continental bakers by stating that the latter, at least those in France and Austria, know their business, while the former do not.

◆

FACTS ABOUT OLEO.

Under this caption the *Butchers Advocate*, a journal published in New York in the interest of the butchers, expresses itself in unmistakable language, which needs no comment from us:

To the many who have read the allegations of the anti-oleo fanatics, that this product is unwholesome and deleterious to the public health, the following eminent scientific opinions may prove of interest.

Prof. Charles F. Chandler, New York City: "The product is palatable and wholesome, and I regard it as a most valuable article of food."

Prof. W. O. Atwater, Wesleyan University, Connecticut: "It is perfectly wholesome and healthy, and has a high nutritious value."

Prof. J. S. W. Arnold, Medical Department University of New York: "A blessing for the poor, and in every way a perfectly pure, wholesome and palatable article of food."

Prof. S. C. Caldwell, Chemical Laboratory, Cornell University: "Possessing no qualities whatever that can make it in the least degree unwholesome."

Prof. Henry Morton, Stevens' Institute of Technology, New Jersey: "It contains nothing whatever which is injurious as an article of diet; but, on the contrary, is essentially identical with the best fresh butter."

Prof. S. W. Johnson, Sheffield Scientific School of Yale College: "A product that is entirely attractive and wholesome as a food."

Prof. Henry A. Mott, Analytical Chemist, New York: "Essentially identical with butter made from cream. A perfectly pure and wholesome article of food."

Prof. Charles P. Williams, Analytical Chemist, Philadelphia: "It is a pure and wholesome article of food, and in this respect, as well as in respect to its chemical composition, fully the equivalent of the best dairy butter."

Prof. Geo. F. Parker, University of Pennsylvania: "It is perfectly wholesome and is desirable as an article of food."

Against this array of uninterested views we have the solitary sensational picture drawn by Dairyman Van Valkenburg of this State, Van Valkenburg conjures up the "awful results" of the alleged failure of oleo to melt in the human stomach at the normal temperature. As a western oleo manufacturer so truly remarked in a recent paper, upon this subject:

Van Valkenburg, not having any recent data at hand in the archives of his department, except thousands of cattle quarantined and slain in New York State, because affected with tuberculosis, and thinking any remarks on that score might raise a suspicion that butter might contain a colony of active consumption germs, turns back to 1885 and says the members of the New York Legislature then decided oleomargarine was unwholesome. To anyone who remembers the feeling against oleomargine at that time, when it was feared it would wipe out the butter industry (a fear entirely groundless, by the way) the wonder is the New York Legislature did not pass sentence of death on every manufacturer at home and abroad; in fact such a sentence would have been fully as sensible and effective as passing a law that the people should not eat a wholesome food, because if they did they might leave off eating another food which another class are producing. Van Valkenburg also says oleomargine will not melt in the stomach "without irritation." However, an eminent scientist, Prof. A. Mayer of Paris, says it will, and most 'scientific gentlemen" know it will melt in the hand and in the mouth, and think it may be risked in the stomach, especially as 67,000,000 pounds of it have gone into the stomachs of the American people last year without, so far as has been heard of, developing anything worse than an appetite for more. Oleomargarine as produced today is much more cleanly than the butter made in this country. The cattle fat used is from cattle inspected before and after slaughter, by United States government veterinarians, and every carcass from which the fat comes is tagged with a certificate of health from the highest authority of the government. How about butter? How much milk from diseased cattle goes into New York State stomachs? How much cream charged with the germs of consumption? How much butter made with filthy surroundings in the midst of children's diseases, contaminated with human and animal matter, finds its way to market, the product of the poor farmer who cannot keep a dairy or creamery outfit? Perhaps not many care how much, but all will recognize the aptness of the maxim that "People who live in glass houses must not throw stones."

The anti-oleo cranks evidently see today that they have made a grievous mistake in waging war upon the oleo, upon the "pure food agitation" basis. Oleo has come to stay. It has come to supersede the rancid, doctored impure and filthy grade of butter which the poorer classes of the country have consumed to date and paid outrageous prices for the privilege. These are the facts of the so-called "oleo controversy" in a nutshell.

HOUSEHOLD.

TESTED RECEIPTS.

Every receipt here given is original, has been practically tested by the AMERICAN ANALYST and is therefore confidently recommended.

BREAKFAST AND TEA.

OMELETTE.

Three eggs, yelks and whites beaten separately half pint milk; two tablespoonfuls flour; salt and pepper to taste. Stir in the white last. In cooking much better success will attend if you fry the omelette so long as will take the bottom to brown then set it to finish in the oven on the top grate, where the heat is strongest. This will brown the top, and it can easily be folded together and served.

BOILED OATMEAL.

Allow four cups of water to one cup of meal, and one teaspoonful salt. Place in a double boiler or in a pail set in a kettle of hot water, and cover it. Do not stir nor touch for three hours, when it will be ready to use.

RICE CROQUETTES.

Half pound of rice; one quart of milk; a little vanilla. Put together on the stove and gradually heat until the rice is tender and the milk absorbed. When cold form into balls, dip into beaten yelk of an egg; sprinkle with cracker crumbs and fry in hot fat. Drain on a cloth and sprinkle powdered sugar over them.

RICH SUGAR COOKIES.

Half-pound each of sugar and butter creamed together; three-fourths of a pound of flour; two eggs, and a little brandy. They should be soft when ready to roll out. Lay each in sugar before baking.

SOFT GINGER BREAD.

One cupful each of sour milk and molasses; one tablespoonful of ginger; one teaspoonful of soda dissolved in one tablespoonful of vinegar. five tablespoonfuls melted lard; flour enough to make it like the thinnest cake batter. This is a fine receipt if you do not get in too much flour.

CAKE.

RAISED LOAF CAKE.

At night, two cups warm milk; one-half cup yeast; one cup sugar; flour to stiffen. In the morning, add one cup butter; one cup sugar; nutmeg, cinnamon, and raisins. Let rise in the pans and bake.

COFFEE CAKE.

One-half cup each of sugar, butter, strong coffee and molasses; one egg; one cupful of raisins; one teaspoonful each of soda, cloves, cinnamon, and nutmeg; two cupfuls flour.

ONE, TWO, THREE, FOUR CAKE.

One cup butter; one cup milk; two cups sugar; three cups flour; four eggs; three teaspoonfuls of baking powder; flavoring. (Two loaves.)

WHITE CAKE (without eggs).

One cup sugar; one cup sweet milk; three tablespoonfuls butter. two cups sifted flour; two teaspoonfuls baking powder.

SWISS CAKE.

One-fourth cup butter; one and one-half cupfuls sugar; two and one-half cupfuls flour; one cupful sweet milk; two eggs; two teaspoonfuls baking powder. Flavor with lemon.

ROYAL FRUIT CAKE.

This is a large receipt, making five loaves; can be kept a year and longer. Five cupfuls flour; one and one-half cupfuls each of sugar and butter; one-half cupful of milk; one cup molasses; one teaspoonful soda; two teaspoonfuls each of allspice and cloves; five eggs; two tablespoonfuls cinnamon; two pounds raisins; three pounds currants; one and one-half pounds citron; one nutmeg.

FILLINGS FOR CAKE.

CHOCOLATE.

One-half cupful each of milk and grated chocolate. Boil together, and when creamy add one cupful brown sugar, one large teaspoonful each of vanilla and butter. Boil until of desired thickness, adding the flavoring last.

LEMON CREAM.

One-half cupful boiling water; one cupful sugar; one scant tablespoonful corn starch, wet and stirred into the boiling water. Add the grated rind and juice of one lemon; butter the size of a walnut, and the yelk of one egg. Let it cook until it shines.

SOFT WHITE ICING.

Do not beat the white until stiff, but just long enough to make it thin. One egg with ten tablespoonfuls sugar will frost two large loaves. A good rule is to measure the white, and to one tablespoonful of the thin substance use five of sugar, always the powdered.

CHEMISTRY OF THE BAKED POTATO.

Usually the first vegetable prescribed by the physician for the sick person who is beginning to use solids is a baked potato. A baked potato, however, may be no better than a boiled one unless it be done in so high a temperature that the starch is affected. Boiled potatoes cannot be subjected to a higher temperature than 212 deg. Fah. Baked potatoes may be done in such a way that they are but a little better than boiled—for instance, done in a slow oven. On the other hand, if they are put into a temperature of 380 or 400 deg. Fah., or what is called a "hot oven," they will be done in such a manner that the conversion of starch will in a degree take place and the potato to be consequently palatable and easily digested. Potatoes roasted in hot ashes or embers are delicious and for the same reason. The high degree of heat cooks the starch properly.

FILE, OKRA, GUMBO.

The *National Druggist* of St. Louis answers an interesting inquiry on this subject as follows:

File is the tender shoots of the sassafras tree, ground up or shredded, and used in the making of gumbo (*gumbo file*). The word is the participle of the French verb *filer*, to become ropy or glutinous, and alludes to the property possessed by the substance of making a glutinous solution. Okra is the seed-pod of *Abelmoschus œsculentus.* When cooked slowly, as in making gumbo, it becomes glutinous, and is used in the same manner as file. It is sometimes called *gumbo*, and is used as a synonym for that dish by Northerners and persons ignorant of Creole cookery. Gumbo is a generic word, probably of African (negro) origin, used in the West Indies and the Gulf States to designate a kind of thick, glutinous soup or stew used in place of soup. Among Creoles and Southerners generally it always has a prefix, or affix denoting the kind of meat, or other addendum used in its preparation. Thus *gumbo file* is gumbo prepared with *file; gumbo choux*, cabbage gumbo; *gumbo ya-ya*, gumbo prepared with meat that has been hung until it has acquired what is popularly known as a "game flavor," in other words is tainted or half rotten; *gumbo poulet*, chicken gumbo; *gumbo a l'ecrevisse* or *gumbo crab*, crab gumbo, etc. We have never heard the term "gumbo soup," used by an educated Southerner or Creole, though we have seen it on hotel menus in the East as a synonym for okra soup.

PEPTIK BREAD.

The Cleveland Baking Powder Company have lately issued a very instructive leaflet which we herewith reproduce, because we believe that it contains valuable information for housekeepers:

A revolution in bread making.—Bread without yeast.—Lighter, sweeter and more healthful than yeast bread.—Ready for the oven in ten minutes, without the hands touching the dough.

Ever since Abraham instructed Sarah to "make ready quickly three measures of fine meal, knead it, and make cakes upon the hearth," to entertain three angels (Genesis xviii, 6), the human family has been striving to improve the method of making bread. The method now most generally used for raising loaf bread is by the use of yeast. This method is tedious, laborious, uncertain, wasteful and unscientific; to raise bread in this way a part of the nutrient properties of the flour is destroyed by fermentation, and often the bread is sour, containing the germs of fermentation, making it totally unfit for use by persons of weak digestion.

All these objections and many others are removed by using Peptik bread. Bread made by the recipes on the following pages does not contain any yeast germs, will not ferment in the stomach, will never be sour, will have a sweet and agreeable smell and taste, and will contain all the natural properties of the flour. It will keep moist and palatable longer than yeast bread, and can be eaten hot or cold without disagreeing with the weakest stomach. It promotes digestion, and we call it our Peptik Bread.

PEPTIK WHITE BREAD.

For one loaf:

1 quart flour,
1 teaspoonful salt,
2 rounded teaspoonfuls Cleveland's Baking Powder.
About one pint of cold water (milk may be used, or half milk and half water).

Mix the flour, salt, and baking powder thoroughly, by rubbing through a sieve twice, into your bread bowl. Then make a well in the center and pour into this all the water. Be sure to use enough water to make the dough quite soft.

With a large spoon stir quickly and thoroughly together, and when all the flour is wet, stir it a moment longer, then turn at once into a well greased baking pan. The pan should be four inches wide, four inches deep, and eight inches long.

Do not knead the dough or beat it.

After the dough has been turned into the pan smooth the top of the dough with a knife dipped into melted butter and bake at once in a moderate oven one hour.

As soon as baked remove from the pan, sprinkle with water and wrap in a bread cloth until cold.

For further information read the last page.

PEPTIK GRAHAM BREAD.

For one loaf:
- 3 cups Graham flour,
- 1 cup white flour,
- 1½ teaspoonfuls salt,
- 2½ teaspoonfuls Cleveland's Baking Powder.

Put these ingredients in a bowl, mix well with a spoon. Make a well in center, pour in one large tablespoonful Orleans molasses and one pint of water. With a large spoon stir quickly and thoroughly together.

When all the flour is wet stir it a moment longer, then turn at once into a well greased baking pan four inches wide, four inches deep, and eight inches long. Smooth the top of the dough with a knife dipped in melted butter.

Bake at once, in a moderate oven, one hour and a quarter. As soon as baked remove from the pan, sprinkle with water and wrap in a bread cloth until cool.

We do not promise you success with the foregoing recipes unless you follow directions implicitly, and use Cleveland's Superior Baking Powder. This baking powder is not only superior in name, but is superior in strength, wholesomeness and certainty. It is pure and sure.

One of the most prominent cookery teachers in the country recently said: "The greatest obstacle I find in my teaching is the failure to follow directions, and most of the failures which come to the cook are due to the fact that women so seldom follow the recipe. They seem to think that a little more of this, or a little less of that, will do just as well, or be better, and will use any baking powder most handy, thinking them all about the same."

If you will follow directions you will have beautiful, white, sweet, wholesome and nutritious bread, with flaky and tender crust. One lady writes us, "I have been making all my bread this way for many months, and thanks to Cleveland's Baking Powder, our table has been supplied with the finest bread we ever ate; it is healthier and less fat-producing than yeast bread. This use alone of your baking powder has been worth hundreds of dollars to me, the bread is so light, so sweet and good, and so little trouble to make"

ADULTERATION.

HOW PURE (?) BEER IS MADE.

The following item from the British press, referring to English brewers only, of course, applies to a certain extent to American breweries. It is, however, but fair to say that many of the chemicals enumerated are obviously for use in cleaning barrels and brewery machinery, and for many other purposes than use in making beer.

The *Mark Lane Express* has done a distinct public service by publishing the following list of the materials now used by brewers in lieu of honest wholesome malt and hops. Our contemporary says:

"Taking up one of the journals devoted to brewers' interests, and casually glancing at it, the number of strange substances found mentioned is very great. It is striking evidence of the use by brewers of other materials than malt and hops in beer. The following list of such things will probably startle even the most accustomed; but it has been prepared simply and solely by taking down, in the order in which they occur, the things advertised for sale, and which we know are used by brewers in the beer. Had we taken other substances, the list, long as it is, would have been greatly augmented. The same substances occur more than once in some instances, because several makers of the same thing give it a distinctive name. Were the subject not too sad to laugh at we might be tempted to make fun of the death and thunder threatened by rival makers who shall attempt to infringe each other's valuable patent rights. We know from the files at Somerset House that the public have paid heavily in some cases for these valuable rights, but we find no trace in the law lists of actions brought against palpable infringements. We are also informed that the following list is by no means full, as certain traders do not advertise their goods, although they are admittedly freely used by brewers. Still, somewhere about a hundred and fifty is a long list, and if farmers knew its full meaning, it would be as sad to them as it is long and uncanny:

Laevo saccharum
Inverted sugar
Carameline
Sacchrosite
D. G. C. (dextrinous grain caramel)
Hop equivalent
Caramelized dextro maltose
Duttson's malt flour
G. and S patent dextro diastatic malts
Gelatinised rice malt
Galatinised maize malt
Flaked golden maize
Flaked silver maize
Granulated silver maize
Granulated golden maize
Caramel
Lionbrand brewing sugars
Saccharines
Dextrin maltose
Torrefied maize malt
Pure malt saccharine
Cane sugar
Invert sugar
Saccharum
Pale yellow malt sugar
Premier liquid caramel
Premier caramel chips
Premier dextrinous caramel (solid and liquid)
Premier salvine crystals (crushed)
Premier black beer priming
Premier potassic-bisulphite transparent crystals
Premier ale priming
Tartaric acid
A. and B. solutions
Phosphate ammonia
Phosphate lime
Phosphate soda
Phylax
Premier dry calcic sulphite (two qualities)
Premier Burton water crystals
Premier Dublin water salts
Premier hop extract
Premier heading syrup and powder
Acetic acid
Bisulphites of lime, magnesia, potash, and soda
Sulphites of lime, magnesia, potash, and soda
Sulphates of lime, magnesia, potash, and soda
Premier barley malt extract (3 qualities)
Premier rice malt extract (3 qualities
Premier malto dextro glucose (3 quantities)
Flaked maize malt
Brewing chlorides
Catechu
Chloride of calcium
Chloride of sodium
Chloride of magnesium
Gypsum
Kainit
Neutralizers (liquid and powder)
Pearl ashes
Permanganate of potass
Salicylic acid (powder and solution)
Sulphurous acid
Tannic acid
Jet caramel
Dry calcic sulphite
Calcic chloride solution
"Cum Grano Salis," for water hardening
Pure malt saccharine
Carbonate of soda
Caustic soda
Caustic potass
Grape or brewing sugar
Patent acid neutraliser
Burton salt liquor
Dry sulphate calcium
Inverted cane sugar
Maltcone saccharine sugar
R. and W. grape sugar
Brewer's saccharum
Laevulose saccharum
Dextro laevulose
Laevo-maltose
Sago and maize saccharines
Purest sulphurous acid
Anticidine
Ecumen or foaming powder
Burton spring liquor
Anti-acetous ferment liquor
Torrefied flaked malts
Gelatinized flaked rice malts
Patent antacid
Patent heading powder
Burton ale salts
Calcic sulphite
K. M. S.
Laevuline priming
Flaked malts
Glucose
Malto peptone yeast food
Raw grain
Corn flakes
L. H. liquid hops
Aroma of hops
Compound yeast food
Hydro-sulphite of lime
Hydro-sulphite of magnesia
Sulphosite
Patent neutralizer
Pure sulphite of lime
Artificial hops
Aphrodite
B. Y. F. Burtonizing fluid
Pure bicarbonate of soda
African hops
H. S. Hop supplement
Patent dry frothing powder
B. P. beer preservative
P. H. permanent hardening
Y. N. Yeast nourishment
M. M. mash material
Heading solution
Brewing material No. 1
Patent grist made from rice only
Dextrin-maltose
Dextro-saccharum

The contention that beer is now purer and better because of the use of these nostrums and substitutes is absurd. The two largest brewers use very few of these things; yet their beer is better liked by consumers, and their balance sheets show that they make handsome profits. It is more fair to argue that because of the use of other material than genuine malt and hops, recourse is had to many of these horrid concoctions and chemicals. Any brewer using any substance other than malt and hops should be made to declare it. This is as much the consumer's as the farmer's question."

Our contemporary has forgotten one very important thing, i. e., to point out who is responsible for the above degradation of English ale. The permission to use such substances in place of malt and hops was given upon the advice of the same blundering gang of ignorant Somerset House chemists, who, by their incapacity to correctly analyze butter or lard, and their standards encouraging milk swindles enable foreigners to mix up to 10 per cent of margarine with butter, 10 per cent beef stearine or other adulterants with lard, and milk vendors to add eight gallons of separated milk and one gallon of water to good genuine milk without a possibility of punishment. If farmers but knew the truth this ignorant department has been the bitterest enemy English agriculture possesses, and more deadly to English trade than all foreign competitors.

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COLMAN'S MUSTARD IN ENGLAND.

The following from *Food and Sanitation* shows what the much vaunted Colman's mustard is, in England where it is made. What it is in this country we are not prepared to say. We only know that the protective label described in the quotation is not used in this country.

At Oldbury, on March 6, Walter Cooper was charged with selling mustard not of the quality demanded, on January 3, last. Police Inspector Ball stated that he visited the defendant's shop and asked for half a pound of mustard. Defendant asked if he wanted the tinned or loose mustard, to which witness replied that he wanted it loose. Defendant weighed the mustard from a canister, and witness then informed him that the sample was required for analysis. The certificate of Dr. Swete showed that the sample was adulterated with starch to the extent of at least 8 per cent. Witness said he asked for half a pound of mustard, and defendant did not tell him that he did not sell mustard alone at all. He simply asked witness whether he wanted the tinned or loose mustard—Cross-examined by Mr. Clark: Sometimes the mustard was sold from a drawer and sometimes it was kept in a canister. The sample supplied to him was loose, and was taken from one of Colman's tins. Mr. Clark explained that Colman's tins always bore labels setting forth that it was an admixture of pure mustard together with farina and choice condiments. The witness further pressed by Mr. Clark said he knew if it came from one of Colman's tins it was an admixture. Later, however, he added that he did not know it was one of Colman's tins that the defendant served it from. Mr. Clark appealed to the Bench as to whether the witness did not say he did in the first instance. Witness said the tin had been opened before he was supplied from it, and in reply to Mr. Clark denied that he knew Colman's mustard was an admixture, but he adhered to his original statement that the sample was out of one of Colman's tins. He did not know that mustard was adulterated, and very seldom sold in a pure state. Mr. Clark said ninety-nine out of every hundred bought mustard mixed. Mr. Clark (to the witness): Do you study the reports issued by the local government board? Witness: They are not sent to me to study. Mr. Clark here read an abstract from a printed statement to the effect that the local government board favored the admixture of mustard and asked witness if he had never come across a statement of that kind. Witness: I cannot tell you, sir. Mr. Clark: Have you ever read that that mixture of mustard is continued for the convenience rather than for the deception of people who desire, not merely mustard-seed, but a preparation of mustard for the table, as it seems to be admitted that pure mustard cannot be kept good without difficulty for any length of time? Witness: I cannot say that I have received any of those papers, but I have not been appointed long, and it is the first case of this kind I have had to deal with. Mr. Clark: I can understand it then if that is the case. The magistrate's clerk (to the witness): You asked the defendant to supply you with the mustard he was selling to other people; you did not ask for half a pound of pure mustard? Witness: No, sir, I did not; I asked for half a pound of mustard. The Bench at this stage stopped the case and dismissed the summons on the ground that the inspector did not ask to be supplied with pure mustard, but simply asked for mustard, and, understanding that he required the article usually sold as mustard the defendant supplied him with it from a tin which bore a label to the effect that it contained a mixture other than pure mustard.

ADULTERATED ENGLISH DRUGS REJECTED.

The chemist officially employed at the New York Custom House recently rejected a quantity of asafœtida on the ground that it did not come up to the requirements of Customs regulations, i. e., 50 per cent of it gum resin, and 3 per cent of volatile oil. This standard is necessary to permit of its being admitted through the Customs, and a precaution against gross adulteration. The charge is made that this drug is being shipped to this country to a large extent from London, and is considerably inferior to that formerly arriving here from Bombay, known as the first-cut gum. The drug trade at the East is discussing the rejection of a number of parcels of asafœtida by the appraisers. The trade are glad that the Custom officials have at last decided to stop the importation of poor or adulterated asafœtida. It is claimed by one firm that only 15 to 20 per cent of asafœtida gum was contained in some of the rejected parcels, while the Customs regulations are that not less than 50 per cent of gum must be shown by analysis. A dealer said that he was glad that the importation of spurious asafœtida had been stopped by the chemist in charge of the drug department of the appraiser's stores. He said that gravel, small stones, and sometimes cobblestones are found in the parcels. Other deleterious substances are found in the parcels, but fortunately they disappear before the article is ready for consumption.

ROOT BEER.

A WARNING FROM A PRACTICAL DOCTOR.

Dr. W. R. D. Blackwood, a physician with a great deal of good logic, sends a communication to the *Medical Summary* on this important subject, which we here reproduce:

In hot weather all of us naturally take to liquid refrigerating agents, and some are in favor of one thing, while others prefer something else. For several years past the community has been beseeched to deal in "root beer" under various alluring promises, and after the originator of this decoction got confidence established, numerous imitators jumped his claim (whoever the first fellow was). How many kinds of "extracts" for the manufacture of this stuff there may be in the market I don't know; there are too many for the public good. Composed as most of them which I have seen are, sassafras predominates, with a flavoring of wintergreen or some allied material, the whole being a vapid imitation of fluid extract of sarsaparilla. To a certain quantity of this base the manufacturer is told to add a large quantity of water, and to start fermentation a cake of compressed yeast is mixed up with the mess. After standing awhile it is to be bottled, and the container well corked; if ordinary bottles are used then the corks are tied down with strings till wanted for consumption (or colic, correctly speaking). Most dwellers in cities, however, get away with some of the bottles belonging to the lager beer man, because the stoppers are easily manipulated, and corks are done away with in this method. Now, when the mixture is corked up, fermentation has not been completed, as in good beers or ales, hence when the bottle is opened a vigorous effervescence ensues, which is taken by the man or woman who is "setting 'em up" as a big thing in the way of home-made beverages. It is not just this, however, but something not quite so alluring or harmless; why? Well, in the first place, fermentation goes on in the unfortunate swallower's stomach after the mess is swallowed, and if the carbonic acid gas don't all come up in a manner more useful than polite, there is going to be trouble, and many folks wonder what made them so much troubled with borborygmi all night, and what was the cause of so much pyrosis. Next comes the secondary effect; the tannin in the barks and roots is apt to set up constipation in many persons, with a consequent act of diarrhœa after awhile, and here again the subject wonders what gave him so much looseness when he had been taking hardly any ice water at all!

For several seasons past I have had a large number of cases of indigestion, due to this soaking of families with this wretched slush, and I have stopped the trouble in all of them by simply letting them know what the *fons et origi mali* was. (It also stopped a lot of professional visits for myself.) As the editor wants me to give him some copy to fill up a corner, I don't know that I can do better than warn my friends of the trouble this prevalent beverage is causing amongst all classes of the community, but more particularly to those whose scruples forbid the drinking of good beer, and who, in lieu of something thicker than water take to this specious humbug. I don't suppose the peddlers of the extract will admire what I have to say about their wares, but after calling attention to the matter amongst a number of my patients and fellow-practitioners they have found by experience that the thing was more serious than it looked to be at first sight, and many a family that used to fill up the refrigerator with bottles of root beer now stick to lemonade, raspberry vinegar or something of the kind when they don't drink either water or a good article of beer from a reputable brewery. See here, my readers! I am not trying to puff lager—not at all! it is good in its place; my object is to call attention to something which has been doing very much harm under a plausible advertising dodge, and which is going to cause more, unless people get out of the notion (altogether too prevalent) that their blood needs "purifying" in hot weather, and that such trash as this root beer is the remedy to be applied. Drop it!

POISONOUS ANILINE COLORS IN CANDIES.

The London correspondent of an American confectioner's journal writes as below. If American candy makers do not use aniline colors, why does their organ print this without comment?

There is a big outcry here just now against the use of aniline colors in confectionery. It is alleged, and with some considerable show of reason, that they are unsafe to amalgamate with foodstuffs. A color manufacturer told me the other day that a short time ago a lad in the employ of a candy maker vomited seriously after eating a few candies which his master had tinted with coal tar products. The coloring agents were taken to a government analyst, who at once pronounced them poison, and expressed a wish to prosecute every one who used them. Fortunately, the concensus of opinion here is greatly in favor of vegetable extracts. All reputable firms handle them, or, at least say they do, although I have a suspicion that this is not the whole truth.

In order to set the matter at rest, I interviewed an authority on anilines. His name is Mr. Arthur Morris, and he is London editor of the *Dyer*. Morris is an out-and-out Bohemian, but he knows his subject down to the ground. I found him buried in books of every description—French, German, Spanish and English. His library is a large one, and he makes a point of collecting everything which appears in print anent colors. Whilst admitting that several well-known coal tar products were unfitted to be assimilated with food, Mr. Morris pointed out, *au contrarie* that dozens of them could be swallowed with impunity by the youngest babe. "Still, for all that," he said, "if I were a candy maker I should not use them. The public are dead against taffies colored with anilines, and it is useless to combat popular prejudice. To give you an idea, though, how absurd much of this prejudice is, I may mention that at a certain color manufactory in Switzerland a workman was employed in doing nothing but sifting anilines. During that time he never on any occasion experienced the least ill-effect from the occupation, although it is computed that he must have swallowed on an average about two grains of the 'poison' daily." And Mr. Morris laughed immoderately. I expostulated. Surely, I remarked, there is some truth in the statements that various cases of blood poisoning have arisen through the use of garments dyed with anilines. "No; I think not," he replied, reflectively. "The chances are a hundred to one that the color had nothing to do with it. My own experience is that blood poisoning is due to the use of loose mordants—the agents employed in fixing the anilines to the fibre." And with this the interviewed one hinted that the conversation must cease.

Popular prejudice, perhaps, is the crux of the whole question. Cunsumers of sweetmeats, rightly or wrongly, look with suspicion upon all candies in which coal tar products are employed. Why, then, should manufacturers continue to use them? There are plenty of substitutes. Vegetable colors are pure and wholesome. They are also cheap, brilliant and fast. What more is required? The candy man in this country who had the honesty to admit that he used anilines—mind you, there are scores who do so secretly—would speedily be driven into the bankruptcy court, or else compelled to take to another trade—such is the strong feeling in England against the incorporation of such colors in foodstuffs.

IN ENGLAND THEY MAKE THEM PROPERLY LABEL MIXED COCOA.

This was an appeal by a grocer carrying on business at Pentre, Glamorganshire, from the decision of certain justices sitting at Pontvpridd, who had convicted him under the Sale of Food and Drugs Act of having sold to Mr. Edward Jones, an inspector under the Act, an article not of the substance, nature, and quality demanded by the purchaser. Mr. Grain, who appeared for the appellant, said his client appealed to quarter sessions against the conviction, but unfortunately the two magistrates who heard the appeal disagreed, and the appeal was dismissed. The case for the respondent was that on the 22d of December, 1892, he went to the shop of the appellant and asked for a quarter pound of cocoa. The appellant handed him a packet which he had wrapped in a piece of white paper, and the inspector paid twopence for it. The inspector sent the cocoa to the public analyst, who had given a certificate that the sample contained 30 parts of cocoa and 70 parts of starch and sugar mixed therewith. The manufacturers of the cocoa—Pearl cocoa—in order to meet the requirements of the Act of Parliament put on the label "Cocoa combined with other ingredients the perfect purity and wholesomeness of which are guaranteed." The price at which the article was sold did not give the manufacturers or vendors a larger profit that on pure cocoa. He (the learned counsel) submitted that the label on the packet was a sufficient protection to the appellant, and that there was no evidence that the admixture had been made fraudulently to increase the bulk, weight, or measure of the article, or to conceal its quality. Mr. Stephen, in opposing the appeal, submitted that there was no label in this case, according to the Act of Parliament, because the packet when handed to the purchaser was wrapped in paper. The Act said the label must be distinctly and legibly printed on or with the article, and it could not be said to be a legible label when it could not be seen. The inspector had no opportunity of seeing the notice when the packet was handed to him. Mr. Justice Matthew: But before he had the cocoa analysed he saw the label. Mr. Stephen said that was so, but his contention was that that was too late. Further, he argued that the addition of the starch to the cocoa was done with the view of fraudulently increasing the bulk. Their lordships held that the conviction was wrong and must be quashed. There was a label showing what the article consisted of, and there was not the smallest ground for saying that there was any intention by the mixture to fraudulently increase the bulk. Appeal allowed with costs.

BOVRIL VINDICATED.

A VILE INSINUATION JUDICIALLY DISPROVEN.

In an action before Lord Kincairney, raised by Bovril (Limited), London, against Joe Smicht, horsedealer and foreign agent, of 93 Waterloo street, Glasgow, and Greenbank, East Kilbride, the pursuers concluded for £1,000 damages, and decree was granted, in absence, for that amount and also for expenses in terms of the conclusions of the summons. The pursuers stated that they were a company with a paid-up capital of £145,000, Lord Playfair being chairman of directors, that they carried on an extensive business as food specialists and as the manufacturers of the fluid beef preparation known as "Bovril", that "Bovril" is the guaranteed product of prime ox beef, manufactured exclusively from the flesh of first-class oxen in the very best condition; and that it is manufactured under the constant direct supervision of Dr. Harkness, Government Analyst, Somerset House, London. They alleged that since the formation of the company in 1889 there had been generally a large and steady increase in the amount of "Bovril" sold, but that in certain districts there had been, during the last two years a decrease in their sales, and that this decrease was owing to a belief, which they were surprised to find existed in those districts, that "Bovril" is manufactured from the flesh of horses. In the course of inquiries instituted by the pursuers, they alleged that they had discovered that the defender, who is a foreign agent in Glasgow, had regularly and systematically since the beginning of 1892 represented himself as being the agent employed by the Bovril Company to buy old horses, and solicited horsedealers and others to sell him such horses for the purpose of being manufactured into "Bovril," and that he had regularly bought horses which he stated were purchased for that purpose. The pursuers characterized these statements as false and calumnious, and they alleged and offered to prove that they were so, and that they had no connection with the defender, but that in reality the horses purchased by the defender were shipped by him to the Continent. The result of those false and calumnious statements made by the defender was, the pursuers alleged, that many persons, both among those to whom the defender made the statements and others to whom the report had spread, ceased to use "Bovril," and advised their friends not to use it. The damage which the pursuers had thus sustained through the wrongous actings of the defender, they said, was moderately estimated at £1,000.

The telephone girl, no matter how charming she may seem to be, is always quite distant in her conversation.

HYGIENIC.

FLIES AND CONTAGION.

Flies have always been a nuisance, and are also dangerous. Experiments made by Dr. Simmonds, of Hamburg, tend to show that they play an important part in the spreading of cholera. In his first experiment he captured nine flies from the room in which he had made an autopsy of a cholera patient, and enclosed them for forty-five minutes in a large flask, where they could fly about at their ease, and at which the air in motion could dry up and neutralize the particles of virus adhering to them. Then he introduced each one to a tube containing liquid gelatine, and at the end of two days the "plaques" were covered with colonies of bacillus virgulus. It is all very well to praise the benevolent man who "would not harm a fly"; the pity of it is the fly does not seem to reciprocate these fine feelings!

ARTIFICIAL ICE.

The Massachusetts State Board of Health concludes, from investigations of artifical ice, that artificial processes of freezing concentrate the impurities of the water in the inner core or the portion last frozen, that the impurities are least if distilled water is used, that the number of bacteria in artificial ice is insignificant, under the prevailing methods of manufacture, and that the amount of zinc found in ice is not sufficient to cause injury from its use.

HOW TO VACCINATE.

In reply to numerous inquiries from those living in rural districts, remote from physicians and towns, who desire protection from small-pox by vaccination, it has been deemed advisable to set forth a plain, simple method by which any person may vaccinate themselves, or parents their children at the mere nominal cost of vaccine points which are ten cents each, for packages of ten points.

1. Secure pure and healthy virus, which is not more than ten days old, as beyond that age it loses its vitality and becomes unreliable. The points can be procured usually at drug stores in cities and towns. Points may also be secured direct from the National Union Vaccine Farm, Englewood, Ill.; Dr. Charles N. Hewitt, Secretary State Board of Health, Red Wing, Minn.; or the Missouri Vaccine Farm, Webster Groves, St. Louis Co., Mo. Full directions for using accompanies each package of points. The Iowa State Board has no interest in vaccine virus, and does not furnish nor handle it.

2. Roll up the sleeve of the left arm to the shoulder. With the edge of a knife, not too sharp, lightly scrape off the skin on a space about the size of one-half of a small pea, in two places about one inch apart on the outside of the arm about six inches below the top of the shoulder. Avoid cutting so as to cause blood to appear. Take up some tepid water on the blade of a table knife, and dip the ivory point in the water. Give the point a gentle shake to remove the excess of water; wait a moment for the virus to soften; wipe off the blood, if any there be on the arm, and press the flat side of the point to the scarified spot, rubbing the virus well in, and also pricking it in with the point. Scrape up all the resulting blood and lymph, plaster it over the spot; wait about fifteen minutes for it to dry: then roll down the sleeve, and let it alone. Use no court plaster, or device to cover the spot. The

sleeve should be loose to allow free circulation. Use one point for every person. Never attempt to vaccinate different persons with the same point. Use no scab, nor lymph taken from another person. Wash the knife clean and wipe it dry after each vaccination.

If there are not indications of inflammation by the eighth day, it may be regarded as unsuccessful, and if it be a primary vaccination it should be repeated; if a re-vaccination, it may be considered as evidence of successful protection against small-pox.

MILK FOR SLEEPLESSNESS.

Dourdoufi has obtained very satisfactory results in the treatment of *rebellious insomnia* by a new therapeutic method. A young man thirty years of age who had been tortured for several months by an insomnia for which sulphonal (2 grammes) and chloral (2-3 grammes) had been used without effect, applied to him. He advised his patient to take, after retiring, some cold milk (previously boiled) three teacupfuls, and if possible more. This was taken every evening during the first hour and a half after retiring, the amount varying from three to six cupfuls. The result was very good, a calm sleep following, which lasted on an average eight hours. It is worth while to note that this result was obtained in an individual in whom sulphonal and chloral had not produced the slightest somnolence.

TRICHINAE.

Trichinæ (*Trichina Spiralis*) are among the deadly enemies of man and of all pork eaters. They are a very minute organism, and generally are of a spiral nature, the female being 3-25 of an inch in length. Their reproducetive powers are enormous, sixty to eighty animals at a time being brought forth by each female and altogether about 1,500. They usually work their way from the intestines of a hog by boring and so get to the muscles, where they coil themselves up and grow. They become covered with a membrane and are described as being encysted. They then remain passive unless the flesh is eaten by man or other animal. When passing through the intestines the shell becomes dissolved and the young bore their way through to the muscles as described, and the horrible disease trichinosis is the result. Cooking is said to destroy the embryos, but that is very doubtful.

In the Dispensary.—Physician—Well, what's the matter with the kid?

Mrs. O'Flynn—Arrah, doctor, th' b'y's head is that shtopped up wid a could that his nose is no use, an' he's a coff on him that wud shplit yer ares. Coff fur th' gintleman, Moikey.

Suggestive —An Irish newspaper has the following, doubtless truthful, advertisement:

"Wanted: A gentleman to undertake the sale of patent medicine. The advertiser guarantees that it will be profitable to the undertaker."

This is as good as the utterance of a Windsor, Ontario, undertaker who had just purchased a new hearse, when remonstrated with upon his extravagance. Said he: "There are lots of people in this town who will be dying to ride in that coach."

'Round Too Much.—Pale with suppressed indignation, Algernon McStab uncrossed his legs, rose stiffly, and turned up his coat collar.

"Glycerince McCurdy," he howled, "you have seen fit to sneer at me. You have accused me of having a wheel in my head. If I have, false beauty, it is at least a wheel that has run true to you?"

"Ah, yes," replied the young woman, with a pensive, far-away look in her soulful eyes, "and yet I hardly want you for a hub, you know?"

THE PEANUT.

ITS VALUE FOR OIL AND FOOD.

[From the U. S. Consular Report.]

The ordinary peanut or "earth nut," is the seed vessel and seed of the *Arachis hypogœa*, and grows in several of the Southern States of the Union and in Brazil, the East Indies, and on the east and west coasts of Africa. In 1891 there were imported into Germany 15,762 tons of peanuts, a slight increase over the imports of the preceding year. The receipts declined to 13,158 tons in 1892, but rose in 1893 to 20,973 tons, of which 25 tons were purchased in New York, 5 tons in Brazil, while 8,471 tons came from West Africa, 5,431 tons from East Africa, and 7,040 tons from British East India. This large supply of imported peanuts is used for the manufacture of oil, and is consumed by about twenty-seven factories which are located in various parts of Germany, some of the principal ones being at Hamburgh, Mannheim, and at Heilbronn, in Wurtemberg.

Peanuts vary greatly in value according to the quantity, and still more the quality of oil which they contain. The finest and most valuable come from the valley of the Senegal, in western Africa, while the lowest grades come from Madras. The principal varieties are graded in the market according to richness in oil and general merit as follows (the percentages being based upon equal weights of shelled kernels in condition for grinding):

	Per cent.
Senegal peanuts	51
Congo peanuts	49
East Africa peanuts	49
American peanuts	42
Bombay peanuts	44
Madras peanuts	43

The duty on raw peanuts imported into Germany is $4 70 per metric ton (2,240 pounds), and the duty on peanut oil is $2.38 per 100 kilograms, equal to about 9 cents per gallon.

The nuts from West Africa and from America arrive usually in the shell, but in East Africa and in India they are often threshed out by machinery and the seed only exported. There is thus a saving of bulk on shipboard, but at some expense of quality, as the kernel or bean of the peanut is much more apt to grow strong and rancid when naked, and more or less crushed and broken by threshing than when inclosed in its natural husk or shell. The shells of dried peanuts constitute 23 per cent of their weight, and are used in Germany as material for certain kinds of paper or are ground up as food for cattle.

At the oil mills the kernels are ground or crushed and submitted to three successive pressings, in which a force of about 250 atmospheres is employed. The first pressing expels about 40 per cent of the oil, the second 4 per cent and the third pressing from 2 to 3 per cent of the remainder. Cold-pressed oil of the first pressing from African or the best American peanuts is used in Germany as salad oil and for various culinary purposes. It ranges in price (wholesale) from $14.75 to $26 per 100 kilograms (approximately from 56.7 cents to $1 per gallon), which is far cheaper than any edible quality of olive oil can be imported and sold in this country. The American peanut is larger, sweeter, and, when roasted, better flavored than any of the others, but its oil is of medium quality and ranks below the African, being worth in the present market $15.47 per 100 kilograms, or 59 cents per gallon. Oil from the East Indian peanuts ranges in value from 40 to 50 cents per gallon, and like the last pressing from African and American nuts is not used directly for food, but is consumed in the manufacture of soap and for various other technical purposes, among which is included the "fattening" of oleomargarine.

The most important secondary product of peanut oil manufacture is the oil cake or meal which remains after the oil has been, as far as practicable, extracted by pressure. This sells for from $30 to $33 per ton, and until within a year or two past has been used in Germany exclusively as food for cattle, sheep, and to some extent for horses, though it is said that it is too rich and heating for working animals, and, except in the coldest weather, causes excessive perspiration unless fed in small quantities and mixed with grains. Under chemical analysis peanut oil shows such extraordinary richness in nitrogenous elements that the German savants have seized upon it is an obvious source of cheap and highly concentrated material for human food, adaptable not only to army and navy rations, but of timely and important value to the peasant and industrial classes, which have suffered from a long and nearly exclusive diet of bread and potatoes, unmixed with a due proportion of nitrogenous animal food. This has led to a series of experiments which are still in progress, and to the invention by Dr. Nordlinger, a chemist at Bockenheim, of a series of preparations from peanut meal which seem destined to play an important part in the future food economy of the German people. The problem was to convert a waste material—the secondary product of oil manufacture—into a palatable, nutritious, and wholesome form of human food, cheaper in cost than the same equivalents of nutrition could be supplied in any other form, and susceptible of simple and easy preparation by any cook of ordinary intelligence. How satisfactorily this result has been already attained is shown by the four samples which are submitted with this report, and which represent the principal forms in which oil cake from peanuts is prepared by the Rademann Food Product Factory, of this city, under the processes of Prof. Nordlinger. These are:

(1) Peanut grits (*Erdnussgrutze*).—The coarse meal dried, purified, bolted, and packed in papier-mache boxes containing one German pound each, which is sold at retail for 12 cents. In this form it is used for soups, cakes, and is cooked like a vegetable as pure.

(2) Peanut flour (*Erdnussmehl*).—Similar to the above except that the meal is ground and bolted like ordinary flour. Both these preparations give the following analysis: Water, 4.8 per cent; protein substances, 48.5 per cent; oil, 22 per cent, and carbo-hydrated elements, 17.9 per cent.

(3) Peanut biscuits.—Dry, light, highly palatable biscuits, or "crackers," containing 1.85 per cent of water, 34.84 per cent of protein substances, 21.51 per cent of oil, 33.64 per cent of starch, 2.73 per cent of inorganic ash, and 5.34 per cent of various other nitrogenous elements.

(4) Diabetic chocolate biscuits.—Highly recommended for persons suffering from diabetes, and containing 2.58 per cent of water, 44.11 per cent of protein substances, 29.75 per cent of oil, 17.1 per cent of starch, 3.5 per cent of ash, and 2.96 per cent of non-nitrogenous elements.

These preparations have been in the market and in experimental use for something more than a year. One of the most important trials which they have undergone was that described in an address delivered before the Berlin Medical Society on the 8th of February last by Prof. Dr. Fuhrbringer, director of the Freidenshain Public Hospital in Berlin, and published in No. 7 of the Berliner klinische Wochenschrift for 1893, a reprinted edition of which I transmit. It gives results of experiments made by Dr. Fuhrbringer, under whose direction the peanut grits and flour were prepared in various forms and supplied as food to 120 men, women, and children, inmates of the hospital named and suffering from the usual variety of complaints that prevail in a public hospital. The report of Dr. Fuhrbringer enters into medical details and technicalities which it is impracticable to follow here, beyond the general statement that of the 120 patients included in the experiments, more than half found the peanut meal soup palatable and excellent, and ate it gladly whenever it was offered. Of the remainder; eight or ten persons found it disagreeable in taste, and the others, while not especially fond of it, ate it without complaint. All throve well upon it, and the analyses of excretions showed that it had been in general well assimilated.

This being the case with invalids, some of whom were suffering from dyspepsia and other digestive weaknesses, it will be readily inferred that for all persons in robust health, particularly for soldiers, sailors, workingmen, and the inmates of prisons and asylums, this cheap and highly nutritious food may have an important value. Its sustaining power is remarkable. Although easily digested and assimilated even by invalids, its durability—for want of a better term—surpasses even that of the hitherto unequaled "Soja bean" of Japan and China. All this has been made the subject of careful experiment by the military authorities of Germany. In the garrisons at Frankfort and elsewhere the men have been supplied with soups made from peanut grits, and the results carefully noted in official reports which have been recently made by the Ministry of War at Berlin, and which are not yet accessible. The first series of experiments, which was made some months ago, was announced by the Ministry of War as having proved quite satisfactory, and if the later trials are equally favorable, it is probable the peanut meal will be included in the future garrison rations and "field sausage" of the German army.

Thus far, however, the most conclusive evidence in its favor is furnished by the analyses which have been made by several German chemists of high authority, and who have rendered the demonstration more striking by comparing the nutritive value of peanut meal with that of other well known forms of vegetable and animal food. One of the most conclusive of these is given by Prof. J. Konig, director of the Agricultural Station at Munster, and published in his "Chemie der Nahrungs und Genussmittel," second edition, volume 1, page 303. In this comparison, which is herewith quoted, the food value of each material is given in the fourth column of the table in "units of nutrition" contained in one kilogram of dry peas, beans, meal, etc.

PRODUCTS.	Nitrogenous elements.	Oily matter.	Nonnitrogenous elements.	Units of nutrition.
	PER CENT.	PER CENT.	PER CENT.	
Peas	22.85	1.79	32.36	1720
White beans	24.27	1.61	49.01	1752
Lentils	25.7	1.89	53.46	1876
Soja beans	34.08	16.45	29.58	2493
Peanut grits	48.26	19.37	19.06	3134

The bulk price of a pound of prepared peanut meal in Germany is a little more than 4 cents, and as by the foregoing analysis one kilogram of that material contains 2134 "units of nutrition," its price is thus reduced to a cost of about 3 cents per thousand. Upon this fact as a basis, Prof. Konig builds the following demonstration, showing the comparative nutritive value and cost per 1,000 units, in Germany, of twelve principal animal and vegetable food materials, viz:

FOOD MATERIALS.	Nutritive units per kilogram.	Cost per 1000 units
Skimmed milk	216	10 4c
Skim-milk cheese	1914	11c
Full milk	320	11.5c
Bacon	2767	15.5c
Butter	2610	20.4c
Veal	1157	22.2c
Beef	1168	26c
Peas	1713	4.2c
Potatoes	304	5 1c
Rye flour	1328	6c
Rice	1177	10c
Peanut meal	3135	3c

It follows, therefore, that peanut meal is not only the most nutritious, but, estimated by its alimentary value, by far the cheapest of this whole list of food materials. From its richness in protein and its low proportion of carbohydrated elements (starch, sugar, etc.), it is especially adapted to the use of persons suffering from obesity, and may be made to enlarge in a most welcome degree the restricted menu of patients under treatment for excessive fatness or diabetes.

From two points of view, this now demonstrated value of peanut meal as human food would seem to have a direct practical interest for Americans—(1) is its increased cultivation and use as food by the German methods practicable or desirable in the United States, and (2) is this new use of oil cake in Germany likely to stimulate the future demand for peanuts of American origin? From what has been stated concerning the comparative values of American, African, and Indian peanuts as oil-producing material, the case would seem to be against the American product. When roasted it is superior in sweetness and flavor to any of the others, but when raw the oil which it yields is inferior, both in point of quality and quantity, to that produced from the nuts from Senegambia and the eastern coast of Africa, where they are grown and gathered under climatic and industrial conditions with which our country will probably find it difficult to compete.

FRANK H. MASON,
Consul-General

Translated—From the Berlin Clinical Weekly (pp. 3 to 7).

EXTRACT FROM A LECTURE BY PROF. FUHRBRINGER ON PEANUT PREPARATIONS AS NEW, CHEAP, AND ALBUMINOUS FOOD PRODUCTS.

It is not my intention, gentlemen, to give you a description of the several methods that have been followed in the treatment of peanut grits as the fundamental ingredient in the preparation of diverse soups and porridges, the dry preparation having been discarded as unfit for human nutriment. By endeavoring to secure the highest degree of simplicity and speed in the production of the same, we have departed from the original Nordlinger formula of boiling the grits over night and of pressing the cooked ones through a sieve, and have sought for the smallest possible kind prepared which could be boiled down at once to softness. This latter kind—as the reduction of the grits to fine flour by grinding, seems to encounter difficulty—we now obtain from the Bockenheim rough-ground peanut grits, both dried and roasted as you see here. These rough-ground grits, or cribble, are treated in the same manner as are our cereals, or as meal, by boiling them at length in water or meat broth. The boiling process must be comparatively complete, a sediment of hard pieces must not remain, and at most only little grainy and loose particles should be left over. The chief manner in which they are served for food is that in the form of peanut-grits soup made with meat broth, and which for obvious reasons I am not able to offer you here in a sufficiently heated quantity. It resembles our ordinary oatmeal soup, and is similar in taste to the same, except that there is a slightly bitter and astringent taste noticeable. At the present time we have dispensed six hundred portions of this soup to about 120 men, women, and children, the plate containing about 25 to 45 grams (1 gram=15.432+grains troy) of rough-ground grits, on the average 16 grams of albumen, with an approximate nourishing capacity, therefore, of about 100 grams of meat, or two eggs, or one-third of a liter (1 liter=0.88036 imperial quart, or 1.056 United States quart) of milk. For weeks about half this number gladly ate this soup daily, and found it to agree with them, and it is especially noteworthy that among this category, there were several who were suffering with dyspepsia and two cachectic patients with abdominal and intestinal carcinoma. Nearly the other half found the soup tolerable, and the remainder—about one dozen persons in good health or with disorders of the stomach (about the tenth part of the entire number) and chiefly females—found it offensive. On repeating the rations, the latter were affected with loathing, stomachalgia, and even attacks of vomiting. The cause of this irrepressible disgust was pronounced to be the soft, oily, bitter, and rancid butter taste. In general, the roasted was preferred to that of the dried preparation; but sufficient data on this point for a satisfactory test are not yet available. A special effect upon the stool (which perhaps may have been slightly arrested) was not discoverable. This specific, disagreeable, oily taste, singular to state, was never pointed out in the dry roasted peanut grits, which have been variously used as an article of consumption.

With respect to the nutritiousness of peanut grits, I must mention here that the science of agriculture has already for a number of years been possessed of at least an equally valuable preparation of similiar derivation—the so-called peanut cake (oil cake) of which this hard and consistent piece is a specimen from the firm of E. Hayne & Co. in Hamburg, and the possession of which I owe to the kindness of Dr. O. Freutzel. This compressed residue (Dr. J. Freutzel, of the Royal Agricultural Institute, of this city, finds that it contains 49.3 per cent of albumen—53.8 per cent protein.—The price per 100 lbs. is about $2.25) is considered the most strengthening food for stall-fed cattle. Unfortunately, it contains that bitter and rancid taste in a much greater degree than peanut grits, and the dark remnants of the pods mixed therein are also objectionable, so that its introduction as an article of human food is confronted with difficulties. But at our children stations soup made out of this preparation was consumed by the children with satisfaction. How remarkable is it not, indeed, that the most valuable ingredient of an article of food should have become the fodder for cattle.

On the durability of peanut grits I am not able to report anything final, as the acquisition of the supply only dates back a few months during the cold season. Unquestionably the oily peanut is apt to become rancid much easier than our derivative substance, and the latter appears the less in danger of decomposition the less it is made fine. Up to the present time, its storage in a warm room and with defective packing has not caused it to undergo any distinct change, and that which some sensitive palates pronounce as a rancid flavor should not, without further test, be attributed to fatty decomposition. At all events I must counsel that it be stored in the manner of the Nordlinger export article, and also to grind it a shorter period before use, as is the case with coffee.

Arriving now at the important question of exploiting this article of food, some preliminary experiments—at which I had the pleasure of the active co-operation of Dr. Freyhan, assistant physician of our hospital—have shown that in the case where the dry preparation was consumed, the greater part thereof was discharged from the body in an unchanged condition. It was especially to be regretted that the roasted grains would reappear in the stool as if the preparation had been mixed therein outside of the body. Only the finer ground particles were perhaps assimilated. Such tests are a drastic and concrete demonstration of the fallacy of the consumption of nuts and almonds comparatively rich in albumen for the purpose of nutrition.

With the boiled peanut grits it was different. Here no perceptible traces of the food are found in the stool, and on examination of the filtrate after treating it with lye of potash very much diluted with albumen, there occurs in contrast to the heavy precipitation, when non-decomposed particles of grits are included, nothing more than a very slight clouding and opalescence. This is a guarantee of a good assimilation of the soup, evidence of which will unquestionably be furnished when the nitrogen is determined. According to Luedtke* in Altona, even the albumen of the Arachis is much more easily disosluble than that of the leguminosæ as the cellular tissues of the peanut contain protein granules and amylum combined almost in equal parts and in equal quantity, while the very large granules of starch of the leguminous plants are surrounded by minute protein granules embedded in a net of protoplasm.

Before concluding, I will allow myself to show you some more peanut preparations, recently sent to me by Dr. Nordlinger. First a sample of peanut baking flour, to the preservability of which Spindler recently called attention; also most palatable crackers, made of pure peanut baking flour, then of an admixture of wheat flour, as also macaroons, which, instead of almonds contain peanut preparations. These crackers and pastries are, of course, reserved for consumption by the *clientela elegans*. Lastly, a substitute for coffee made of peanuts, which, having a strong taste of coffee, is much liked by patients.

Dr. Nordlinger has also informed me that tests for the production of further preparations from the raw material, are in progress. On the other hand I understand that peanut grits are already being served in various styles (such as *purees*, etc.) on the tables of Berlin families. Of course, we can never consider our soup as a delicacy. What has chiefly awakened and sustained my interest is the use of the preparation as a nutriment for the sick, especially as a food for the mass of people in hospitals. For such a purpose I can with conscientiousness recommend the peanut soup prepared from the finer raw material—it is also to be hoped that even better forms will be discovered—as a strengthening, well assimilative, uncommonly cheap article of food. On the average it agrees with persons, and, when partaken after intervals of interruption, is generally liked. It is to be especially valued as a part of the diet of those suffering with diabetes or corpulency. How acceptable to this class is any new article of food that may be added to their restricted menu. For those ailing with Bright's disease and chronic kidney disorders, where the consumption of too much animal albumen is questionable, it is also most welcome. Its use might also prove of advantage in the Playfair Mitchell cure, especially if success is had in removing the objectionable flavor described above. To effect this will, of course, require many more experiments on a large scale.

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*See "Progress in the Treatment of the Sick," 1893.

HORSFORD'S ACID PHOSPHATE

If you are nervous, and cannot sleep, try it. Dr. E. Cornell Esten, Philadelphia, Pa., says: "I have met with the greatest and most satisfactory results in dyspepsia and general derangement of the cerebral and nervous systems, causing debility and exhaustion."

In the Cemetery.—Tommy—All these people haven't gone to heaven, auntie.

Aunt—Hush, Tommy! Why do you say that?

Tommy—Because I read on some of the tombstones, "Peace to his ashes;" and they don't have ashes only where it's very hot.

New Yorker—You don't see any grass in our streets, anyway.

She (from Philadelphia)—No-o. Must be the climate. The soil is certainly rich enough.

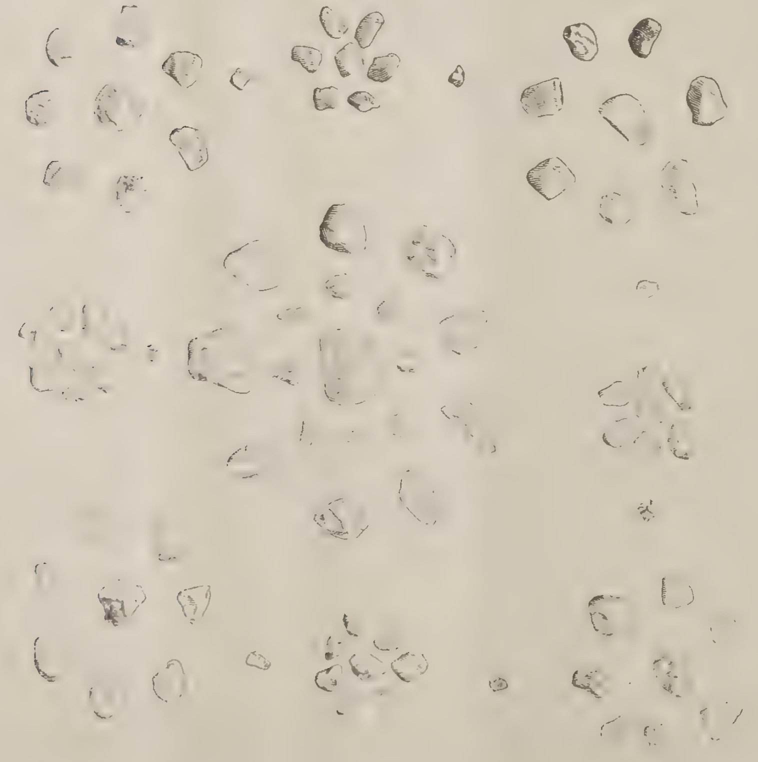
Mrs. S. to applicant—Are you a good cook?

The Applicant—Well, ma'am, it's thirty years come Christmas I've bin a faithful mimber of the church; shure I orther be good.—*Elmira Gazette.*

BUFFALO LITHIA WATER

A POWERFUL SOLVENT OF STONE IN THE BLADDER.

The following plate is from a photograph and represents the exact size and shape of Calculi passed by the Hon. T. J. Jarrett, ex-Mayor of Petersburg, Va., under the action of Buffalo Lithia Water.



The original stone shown in the cut together with one from a similar case, will be on exhibition at Ditman's Pharmacy, Astor House, Corner Broadway and Barclay Street, New York, from where water may be obtained.

Statement of Dr. John Herbert Claiborne, M. A., M. D., of Petersburg, Va., ex-Presiden and Honorary Fellow Medical Society of Virginia.

PETERSBURG, VA., Sept. 5, 1892.

E. C. LAIRD, Buffalo Lithia Sprnigs, Va.

My Dear Doctor:—I send by this mail a box of CALCULI, passed at various times within the last year by Hon. T. J. Jarrett, our former mayor, whilst drinking the BUFFALO LITHIA WATER. They give him but lttle pain now when passing. I have never critically examined the broken CALCULI, passed in such quantities from Mr. Jarrett's bladder, but am under the impression that the most of them were MANESIAN PHOSPHATES. There were specimens, however, which presented the appearance of OXYLATES, and, I remember, impressed me specially as being URIC ACID. I do not pretend to account for the mode of their solution by the Buffalo Lithia Water. There is nothing in its analysis which would warrant such results, but THE RESULTS ARE THERE, and seeing is believing. I can only suppose that in Nature's alembic there has been some subtle solvent evolved, too subtle to be caught by our coarse agents, which makes this wonderful disintegration. "There are many things in heaven and earth not dreamt of in our philosophy," and his is a short creed who believes only what he can prove or explain. Faithfully yours, JOHN HERBERT CLAIBORNE.

It is well known that stone in the bladder, for the most part Gout, Rheumatic Gout Rheumatism, and also various forms of Dyspepsia and Nervous prostration have a common origin, viz.: excess of uric acid in the blood. It is evident, then, from the foregoing statement, that this water must possess extraordinary potency alike in all of these maladies. In Bright's Disease of the kidneys it is well-nigh specific.

Water in cases of one dozen half-gallon bottles, $5.00, f. o. b. here, and for sale by all first-class druggists.

Illustrated 32-page pamphlet, giving further information, sent prepaid on application to

THOMAS F. GOODE, Proprietor,

BUFFALO LITHIA SPRINGS, VA.

INVENTIONS, SCIENCE, ETC.

WHAT IS CHEMISTRY?

Everybody who thinks must be impressed by the great variety of things found on this earth, and the question what does the earth consist of? must often suggest itself. Among the important results reached in studying the things around us is this, that notwithstanding their great variety they are made of simple things and these in turn of still simpler—that there are in fact only about seventy distinct kinds of matter, and that all the complex things around us are made up of these seventy elements. The solid crust of the earth as far as it has been possible to investigate it, all living things, both animals and plants, the air and water, consist essentially of twelve elements. The elements do not, as a rule, occur as elements. They are generally found in combination with one another. Oxygen and nitrogen are, to be sure, found in the air as elements, uncombined; but such familiar substances as water, salt, and quartz consist of elements in combination. Thus water consists of hydrogen and oxygen; hydrogen, the element, is a colorless, tasteless, inodorous, and very light gas that burns readily; oxygen, the element, is also a colorless, tasteless, inodorous gas. It does not burn, but burning things burn with much increased brilliancy in it. When hydrogen and oxygen are mixed together in a vessel under ordinary conditions, no action takes place. They mix thoroughly, forming a mixture that is also a colorless, tasteless, inodorous gas. If a spark is applied to this mixture, a violent explosion occurs, and this is the signal of a great change. The two gases have entered into chemical combination; they are no longer the gases hydrogen and oxygen; they have entered into combination and now form the liquid water, a substance with properties entirely different from those possessed by the constituents.

Again, chlorine, the element, is a greenish-yellow gas that acts violently upon other things and causes changes in them. Inhaled even in small quantity it gives rise to distressing symptoms, and in larger quantity it causes death. Its odor is extremely disagreeable. Sodium, the element, is an active substance that has the power to decompose water and set hydrogen free. When chlorine gas is brought together with sodium, the two combine chemically and form the well-known compound salt, or, as the chemist calls it, sodium chloride. From this, the elements chlorine and sodium can be obtained by the chemist. These two examples serve to show what is meant by chemical combination and by a chemical compound. Chemical compounds are generally found mixed with other compounds. This is shown, for example, in many of the varieties of rocks, as granite, which consists of three different chemical compounds. It is shown much more strikingly in living things, all of which are made up of a large number of chemical compounds, mixed, to be sure, not in a haphazard way, but beautifully adjusted and working together in wonderful harmony.

Just as elements combine chemically to form compounds, so elements act upon compounds and cause changes in their composition. Thus, oxygen is constantly acting upon other things, sometimes slowly, but, in the case of fire, rapidly and with tremendous energy. It is commonly said that fire destroys things. In fact, it changes their composition, and the principal products of the change are gases. This kind of chemical change is the most familiar that is brought about by the action of an element upon compounds. Compounds, too, act upon compounds, and cause an infinite number of changes in composition. Thus the food we partake of consists of chemical compounds. In the body these compounds find others and they act upon one another so as to repair the wasted tissues and cause growth. The gas known as carbonic acid, that is contained in the air, acts upon the compounds in the leaves of plants and causes changes that are absolutely essential to the life and growth of the plant.

Look, then, in any direction and you will see evidence of changes in composition that are constantly taking place, and that are essential to the existence of the world as it is. These changes in composition and the compounds themselves that are involved in the changes form the subject of chemistry. In the light of what has been said it is clear that chemistry must be a very broad science. Remembering that chemical action is the cause of the formation of chemical compounds, that without chemical action the compounds would cease to exist and would be resolved into their elements, it is impressive to think what would take place if chemical action should cease. Most of the things familiar to us could not exist. The solid portions of the earth would to a large extent be replaced by the element silicon, something like charcoal, and by oxygen and a few metals such as sodium, potassium, and aluminum. Water would be resolved into the two gases hydrogen and oxygen. All living things would fall to pieces, and in their place we should have the gases hydrogen, oxygen, and nitrogen, and the solid element carbon, most familiar to us in the form of charcoal. Life would, therefore, be impossible.—*Prof. Ira Remsen, in the Chautauquan.*

THE DOCTOR KNEW.—Long ago, a man went to Dublin to order a coffin for Pat Connell. "Dear me," said the undertaker, "is poor Pat dead?" "No, he's not dead yet," was the reply, "but he'll die to-night, for the doctor says he can't live till morning, and he knows what he gave him."

DIOVIBURNIA

UTERINE, TONIC, ANTISPASMODIC
AND ANODYNE.

A reliable and trustworthy remedy for the relief of Dysmenorrhœa, Amenorrhœa, Menorrhagia, Leucorrhœa, Subinvolution, Threatened Abortion, Vomiting in Pregnancy and Chlorosis; directing its action to the uterine system as a general tonic and antispasmodic it is unexcelled.

FORMULA.—Every ounce represents 3-4 dram each of the fluid extracts: Viburnum Prunifolium, Viburnum Opulus, Dioscorea Villosa, Aletris Farinosa, Helonias Dioica, Mitchella Repens, Caulophyllum Thalictroides, Scutellaria Lateriflora.

ST. LOUIS, MO., June 23, 1888.

I have used DIOVIBURNIA enough to satisfy myself of its merits. It is of unquestionable benefit in painful dysmenorrhœa; it possesses antispasmodic properties which seem to be exerted especially on the uterus.

Dr. H. Tuholske

Professor of Surgery, Post-Graduate School.

ST. LOUIS, MO., June 18, 1888.

I have given DIOVIBURNIA a fair trial, and found it useful as an uterine tonic and antispasmodic, relieving the pains of dysmenorrhœa and a regulator of the entire uterine functions. I feel authorized to give this recomendation.

L. Ch. Boisliniere

Professor of Obstetrics, St. Louis Medical College.

ST. LOUIS, MO., June 18, 1888.

For more than a year I have prescribed DIOVIBURNIA. In those cases that I have been able to follow up, found that they derived much benefit from its use in almost every form of dysmenorrhœa—especially the conjestive form. I am so pleased with it that I now prescribe it almost daily.

T. L. Papin M D

Physician in Chief and Gynecologist to St. John's Hospital.

ST. LOUIS, MO., June 20, 1888.

I very cheerfully give my testimony to the virtues of a combination of vegetable remedies prepared by a well-known and able pharmacist of this city and known as DIOVIBURNIA. I have employed this medicine in cases of dysmenorrhœa, suppression of the catamenia, and in excessive leucorrhœa, and have been much pleased with it. I do not think its claims (as set forth in the circular accompanying it) to be at all excessive.

Jno. P. Johnson

Professor of Principles and Practice of Medicine, St. Louis Medical College.

DOSE.—For adults, a dessertspoonful three times a day, after meals. In urgent cases, where there is much pain, dose may be given every hour or two, *always in hot water.* Put up in Eight Ounce Bottles.

To any Physician, unacquainted with the medicinal effect of Dioviburnia and Neurosine, we will mail pamphlets containing full information, suggestions, commendations of some of the most prominent professors in medicine and various methods of treatment. Or to those desiring to try Dioviburnia and Neurosine, and will pay express charges, we will send on application a trial bottle of each.

DIOS CHEMICAL COMPANY, ST. LOUIS, MO.

WHY THE AVERAGE LONGEVITY IS INCREASING.

The medical examiner of a leading life insurance company in a recent conversation remarked his observation of a marked decrease within the past decade in the frequency and virulence of what are recognized as hereditary diseases, in which blood taint is transmitted from parents to offspring—scrofula, for instance. Such maladies cause an enormously large percentage of deaths, particularly among the young, either directly by their own development, or indirectly by their so far weakening the vital forces that there is less than normal resistance to the encroachments of casual ailments. Hence, if diminution of the volumes of hereditary disease is attained, the race has taken a proportionate step toward promotion of average longevity. We have before us a long endeavor, if we would return to anything like the primitive conditions represented by Biblical history. Noah, we are told, attained an age of 950 years, Shem 600, Arphaxad 433, Peleg 239, Abraham 175, a rapidly descending scale which seemed to have reached its lowest point a few years ago, when, according to the most conservative insurance statisticians, the average duration of human life had got down to 33 years, and in the principal centres of civilization as low as 27 years. From that point within the past ten years the tendency has been upward and sufficiently marked to command earnest interest and afford much encouragement for the future. The improved sanitation of cities, effective measures for stamping out infectious diseases and better condition of the masses, have no doubt been important factors in producing this effect, but not all together have been of such radical importance as arresting the transmission of blood disorders from parents to offspring. the making of health instead of disease hereditary, strength instead of weakness the natural law.

It may seem a large claim to aver that the degree to which this has already been attained is the effect of the general use of any one particular medicine, but there is excellent reason for belief that such is the fact. To eliminate blood taints from the human system, only certain substances, mineral and vegetable, known in medical science as "alteratives" possess any potency and experiment has demonstrated that their efficacy is very greatly enhanced when administered in combination beyond what either would possess singly. In achieving this demonstration, through tests of many compounds of varying proportions and diverse qualities in their component parts, one has been found of infinite superiority to all others, so much better indeed that it has been accepted all over the world as the standard official alterative preparation. It is a compound of Honduras sarsaparilla, yellow dock, stillingia, mandrake, and the iodides of iron and potassium and is known to all pharmacists and the world at large as "Ayer's Compound Extract of Sarsaparilla." Its formula has never been kept secret and may be followed by any pharmacist, the only advantages the manufacturers have for retention of the business of its preparation being that they practically control the world's supply of two of the ingredients employed, and are enabled to use more perfect processes for extraction of the most valuable and volatile principles of the vegetable drugs than could be profitably resorted to in a business of any less magnitude than theirs. Add to these bases of probability the undeniable fact that in every community where Ayer's Compound Extract of Sarsaparilla is largely used, conscientious physicians have to report a surprising decrease in the ordinary numbers of cases of blood disorders and "hereditary" maladies caused by transmission of tainted blood, and it must be apparent that the claim was not excessive, that to this medicine, more than to any other individual cause, is fairly attributable the observable increase of longevity in civilized countries.

It's Education—

simply a matter of education—the use of **Pearline** for washing and cleaning. The bright women, those who learn quickly, are using it now. The brighter the woman, the larger her use of it—the more good uses she finds to which she can put **Pearline.** Dull women, those who never use new things until their bright sisters have drummed it into them—they'll use it presently. It's just a question of sooner or later, with every woman who wants the best.

Send it Back Peddlers and some unscrupulous grocers will tell you "this is as good as" or "the same as Pearline." IT'S FALSE—Pearline is never peddled, and if your grocer sends you something in place of Pearline, be honest—*send it back.* 404 JAMES PYLE, New York.

Indigestion

Horsford's Acid Phosphate

Is the most effective and agreeable remedy in existence for preventing indigestion, and relieving those diseases arising from a disordered stomach.

Dr. W. W. Gardner, Springfield, Mass., says: "I value it as an excellent preventative of indigestion, and a pleasant ascidulated drink when properly diluted with water and sweetened."

Descriptive Pamphlet free.

Rumford Chemical Works, Providence, R. I.

Beware of Substitutes and Imitations.

For Sale by all Druggists.

THERMOMETERS.

The Centigrade thermometer scale has, it is reported, been adopted by the German Government in place of the Reaumur scale, hitherto commonly used in Germany. It cannot be denied that this is a wise step, as the Reaumur scale has little to recommend it. The Centigrade scale, which bears the name of Celsius, outside France, was in 1742 proclaimed independently by that scientist, and by Christin of Lyons. Celsius originally made 0 deg. the boiling point and 100 deg. the freezing point, reckoning degrees downwards. Uniformity in weights and measures is one of the popular demands of the day, and it is quite time that the same step should be taken in this country with regard to the Fahrenheit as Germany has done with regard to the Reaumur scale.

◆

PASTE FOR CLEANING SHOW WINDOWS.—*Neuste Erfindund Frfahrungen* gives the following: Cut up fine 2 parts castile soap in 3 parts of boiling water and dissolve. To the solution add 4 parts of prepared chalk, 3 parts of Vienna chalk, and 2 parts finest tripoli. Stir until thoroughly homogeneous, put into moulds and let set. Another formula is as follows: 3 parts castile soap, 4 parts boiling water, 2 parts jewelers' rouge, 5 parts prepared chalk, and 3 parts burned hartshorn. Mix in a similar manner.

◆

HOW'S THIS?

We offer One Hundred Dollars reward for any case of Catarrh that cannot be cured by Hall's Catarrh Cure.
F. J. CHENEY & CO., Toledo, O.

We, the undersigned, have known F. J. Cheney for the last fifteen years, and believe him perfectly honorable in all business transactions and financially able to carry out any obligation by their firm.
WEST & TRUAX, Wholesale Druggists, Toledo, O.
WALDING, KINNAN & MARVIN, Wholesale Druggists, Toledo, O.

Hall's Catarrh Cure is taken internally, acting directly upon the blood and mucous surfaces of the system. Testimonials free. Price, 75 cents per bottle. Sold by all druggists.

WHO DISCOVERED AMERICA?

COLUMBUS DID NOT.

In the *Fortnightly Review*, London, January, there is a remarkable article by Captain Gambier, R. N., tending to deprive Columbus of all credit as the discoverer of America, and to represent him as sailing with precise information of the existence of land to the westward, derived from the perusal of the narrative of an earlier adventurer, Jean Cousin, a Frenchman of Dieppe, who discovered the Amazon in the year 1488. That this said Dieppe sea-captain has been robbed of the immortal fame which should attach to his brilliant discovery is attributed by Captain Gambier to a huge conspiracy between Ferdinand and Isabella, Pope Alexander VI and Columbus.

Both navigators are assumed to have drawn their inspiration directly from the "Imago Mundi" of Pierre d'Ailly, Bishop of Cambray, who wrote his book in 1410, and died, leaving it in manuscript to be printed in 1480; and indirectly to the narratives of Marco Polo and Mandeville, and the speculations of Aristotle, which won especial interest among cosmographers in the adventurous fifteenth century.

In support of the probability of the statements here put forward, special stress is laid by Captain Gambier on the facilities enjoyed by Captain Cousin for acquiring, even in early life, a thorough knowledge of all that had been written on the subject, and, in this connection, stress is laid upon the fact that Marco Polo's narrative was written in French. The main point of contention, however, is that Cousin was a naval commander of repute, and that he was the adopted son of Des Chaliers or Descalier, priest of Argues a town contiguous to Dieppe, who enjoyed quite a reputation as a man of science, skilled in map-making, and in the art of finding latitude and longitude by heavenly bodies, studies in which he had carefully instructed his adopted son. These facts are derived from Sieur Asseline's "Antiquitez et Chroniques," which were copies of State papers and documents in the archives of the admiralty at Dieppe. Every original document referring to the maritime history of Dieppe and with them of course Cousin's logs and journals, perished in the flames on the destruction of Dieppe by the English in 1694.

Now, in the writings of Asseline there is no doubt that Cousin sailed up the Amazon (Maragnon, us Cousin pronounced it after the natives); and Captain Gambier appears to take it for granted that in view of the important mercantile advantages to be derived from the discovery, the French deliberately designed to maintain it a secret.

But there was another episode of this voyage of Cousin that tended to dwarf the importance of his discovery, and this introduces the diabolus ex machina of both Cousin and Columbus. Cousin's second in command was Vincent Pincon, a fact of which we have evidence in Cousin's own report to the Admiralty on his return from his voyage, as quoted by Desmarquet, who is assumed to have seen and copied it. Pincon is described as a good sailor, ignorant, jealous, and bad-tempered; a frequent source of trouble and annoyance to Cousin, and who capped the climax on the return from Brazil to the African coast, by provoking a quarrel with the natives, which necessitated Cousin's firing on them to repel their attack. This was considered in France so grave and reprehensible an occurrence that the discovery of land to the westward lost in significance. In 1503 we find Pincon back in the Amazon again with four ships under his command, and the inference is that he did not reach it on his voyage with Columbus, because the latter would not trust himself so far south; but that Pincon knew where to find it because he had been there before. Read in the light of Captain Gambier's presentation of his facts, many of the incidents in the narrative of Columbus's career exhibit themselves in a new aspect, and Captain Gambier argues very forcibly that the exorbitant terms demanded by him, and Queen Isabella's final submission to them, are intelligible only on the assumption that Columbus was then possessed of actual knowledge of land to be reached by crossing the Atlantic, and that he derived this knowledge from the brothers Pincon, who were prepared to place their money and ships at his disposal if he could secure a commission from one of the great Governments.

DO COFFEE AND TEA FACILITATE DIGESTION?

BY C. FALKENHORST.

This celebrated chemist prepared from the fresh mucous membrane of a pig an extract which approached very nearly in character to the gastric juice, and first tested it with the albumen of a boiled egg. The operation was completed in eight hours, and 94 per cent of the substance converted into digested albumen. He then submitted a decoction of tea and coffee, severally, to the action of the same preparation. In the case of the coffee 61 per cent, and in the case of tea 66 per cent of the albuminous contents was digested, thus confirming the observation frequently made by physicians that boiling materially prejudices the digestibility of albuminous substances.

Treating more particularly of coffee, he observes that it contains several active principles, each of which exercises an influence on the system. The most important of these are: First—Caffein, which raises the activity of the heart, operating, in small quantities as a wholesome stimulus, but as a poison when taken in excess. Second—An aromatic substance, which operates principally on the nerves, acting in moderate quantity as an agreeable stimulus; to this it is attributable the phantasies so frequently experienced as a result of coffee drinking. Third—The coffee bean contains tannin, to which it owes its bitter taste, and this, as is well known, enters into combinations with albumen which materially prejudices its digestibility. These three principal substances vary very much with the method of preparation. If the coffee is simply infused in water at the boiling point, and allowed to cool at once, we get little caffein, a great deal of the aroma, and scarcely a trace of tannin. If we allow the coffee to boil for a time, the aroma is dissipated, passing off with the steam; we get more caffein, and the longer it is boiled the more tannin is dissolved out.

These experiments confirm the view generally expressed by physicians, that coffee long boiled prejudices digestion, while a simple infusion facilitates it; but its beneficial action in the latter case is now shown to be due, not to direct chemical action on the albumen present, but indirectly to its action on the nerves of the stomach, promoting the secretion of gastric juice. In other words, its action is physiological, not chemical.

Turning now to tea, he finds its constituents very nearly similar. The tea leaves also contain caffein (called, also, theine), aromatic substances, and tannin Consequently in tea, as in coffee, the properties of the beverage depend very much on whether it is an infusion or a decoction.

The problem is very simple. The traveller on the march will find himself benefited most by the caffein, and to secure this the coffee must be brought to and maintained for a few minutes at the boiling point. But to take boiled coffee after a full meal impedes digestion and heightens the heart's action unduly. On the other hand, an infusion of tea or coffee, taken at such times, facilitates digestion and exerts a wholesome and exhilarating action on the nervous system Long boiling, or stewing near the boil, of either tea or coffee, brings out all the tannin, which is always prejudicial to digestion. As a consequence, the practice of keeping tea or coffee hot, as at restaurants, is a pernicious one.

"He is WELL PAID that is well SATISFIED."
—*Merchant of Venice.*

The Verdict
OF ALL WHO
Use

Is that it
SATISFIES EVERY DEMAND
of the careful housekeeper for frying and shortening purposes. It is far cheaper than butter, more economical than lard because it goes twice as far, and is sure to produce good results without waste. Therefore
IT PAYS WELL TO USE
Cottolene
GET THE GENUINE.

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CHICAGO, 1893. PHILADELPHIA, 1876. LONDON. 1851.
Try "SILVER GLOSS."
T. KINGSFORD & SON. Manufacturers. OSWEGO, N.Y. U.S.A.
BEST QUALITY IS GOOD ECONOMY.
THE STANDARD OF EXCELLENCE FOR OVER FIFTY YEARS.

A METAMORPHOSIS IN FURS.

"Do you know what is one of the most important fur animals that we have?" said a Fifth avenue fur dealer. "Well, it is the common, malodorous skunk; but you never heard of skunk fur in a retail store. We sell it as black marten, and it enters largely into the trimming of cloaks, the making of children's muffs, mufflers and such articles. It is really a fine, soft, long fur, and rather costly. There ought, really, to be no prejudice against skunk fur as such, as it is thoroughly deodorized and perfectly cleanly and healthful to wear. Skunk is a disagreeable word, simply because the animal is capable of making an extremely disagreeable odor. But if a skunk is not molested, he will not use his powerful and unique means of defence.

"It is a fact that some trappers have successfully started skunk stock farms. The wholly black animals are most valuable, as a pure black skin of good size will bring $1.50, while those striped with white sell as low as 25 cents. Of course, the fur can be dyed and is dyed, but the trappers have generally lost this difference in price on the striped skins. Lately, however, some of the country boys have taken to fooling the fur buyers by dyeing the furs themselves with mustache dye or other concoctions. Great is the wrath of the dealers when they detect such tricks. There is a story up in Connecticut that one trapper passed off a lot of imitation skunk skins on a buyer who was too tipsy to see the deception until it was too late to trace it. The trapper had the skin of a jet black Holstein cow that had grown a fine, long fur by the animal's previous exposure to the blasts of winter. This cowhide he carefully cut up to imitate skunk skins, tails and all, and counting them out rapidly to the dealer, along with the genuine skins, he made them pass the befuddled inspection of the buyer and got $20 for the cow's hide, all the whole animal was worth. The skins were baled and sent to New York. After that, this particular dealer never bought skunk skins when he was tight.

"One of the ways of trapping the skunk is to prop up a heavy flat stone by a series of sticks bent and joined together so as to represent a figure 4. On the horizontal bar of the figure a piece of meat—generally skunk's flesh—is placed, and a slight disturbance of this bait springs the trap and the heavy stone falls on the animal. When the skunk is caught in common steel traps, they are shot by a bullet through the head, a performance that requires caution and good marksmanship.

"At a recent large sale of furs in London, the kind that exceeded all others in aggregate value was the ordinary muskrat. These wily denizens of brooks and ponds are trapped in great numbers in this country. They can be easily traced by their paths leading to the water's edge, but the trap must be placed under water, in the mud as they are too wise to get into any trap set on shore. Though muskrat skins sell as low as ten cents apiece, the value of the fur caught every year amounts to millions of dollars. The red and silver foxes, however, furnish the most sport for the fur hunter. The skins bring from $1.50 to $3.00, and a successful day's sport has both its pecuniary profit and fund of enjoyment. Many hunters carefully protect the female foxes and their young, so far as possible, so as to insure plenty of sport and furs in the fall and winter."—*Tribune.*

There is no need to worry over an aching tooth. Just drop into some dentist's and it will come out all right.

TO THE MEDICAL PROFESSION.

Elixir Salicylic Acid Comp.

PREPARED ONLY BY WM. R. WARNER & CO., PHILADELPHIA, PA.

This preparation combines in a pleasant and permanent form, in each fluid drachm, the following:

℞	Acid Salicylic (Schering's)	-	grs. v.	Potass. Iodid.	-	grs. iss.
	Cimicifuga - - -	-	grs. i ¾	Tr. Gelsemium	-	gtt. i.

SO PREPARED AS TO AFFORD A PERMANENT, POTENT AND RELIABLE REMEDY IN

RHEUMATISM, GOUT, LUMBAGO, Etc.

This preparation is especially valuable for rheumatic diathesis and in the treatment of acute inflammatory, subacute and chronic rheumatism; any of which will yield to tablespoonful doses; every three or four hours, until four doses are taken; then a dessertspoonful at a time and finally decreased to a teaspoonful every three or four hours.

In acute inflammatory rheumatism, experience has proven that two teaspoonfuls administered every four hours, until a slight ringing in the ears follows, the dose then decreased to a tablespoonful every three or four hours, will produce the desired effects.

The advantages of Elixir Salicylic Acid Comp. are afforded by the combination of Salicyclic Acid with Soda in excess, thus forming a salt less corrosive and irritating and more readily borne by the stomach.

The other ingredients possess advantages well known to the Profession to whom this preparation is alone introduced, we therefore suggest the propriety of specifying "Warner & Co.'s" and ordering in 12-oz. quantities, to obtain original bottles.

It is a matter of great satisfaction to us to be able to place before the Profession a remedy so effectual in the cure of one of our most stubborn classes of disease.

Elixir Salicyclic Acid Comp. is put up in 12-oz. square blue bottles, with prescription label on it, and may be obtained from Druggists everywhere. See that no substitutes are offered.

ESTABLISHED 1823.

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HONEST DAIRYMEN.

About this time when the honest dairyman is being paraded before the public by the wily politician for political capital and the cunning butter merchants of the New York Mercantile Exchange for sympathy to help them to down pure and wholesome oleo, it may be as well to lay before our readers a report from an official source, which shows what little tricks are employed by the "honest" diarymen in manipulating bogus butter.

Prof. Harvey W. Wiley, Chemist of the United States Department of Agriculture, Washington under date of April, 1893, in a message to the Hon. J. Sterling Morton, Secretary of Agriculture, regarding a sample of a nostrum used by "honest dairymen" who sell "pure butter," says:

"'The sample was purchased from parties furnishing it to creameries at Owosso and Vernon, Michigan, who use it in churning over old rancid butter for making fresh creamery butter out of it. It was sent by J. S. Wilson, secretary of the Michigan Dairy Association, Flint, Michigan.

"'It is a white powder, only partially soluble in water. The insoluble portion is composed of wheat or rye-starch and some undetermined granular matter. The sample does not have any power of coagulating milk, and therefore probably contains no organic ferment. The soluble portion is composed chiefly of sodium sulphate and potassium nitrate. It contained of the latter substance 47.80 per cent. It also contained 11.13 per cent of albuminoid substances. It is essentially a mixture of potassium nitrate with some sodium sulphate and a large quantity of wheat and rye flour.'

"The farmers, dairymen, creamerymen, and butter dealers have much to say about fraudulent substitutes for pure butter. There is wide difference between the ideal 'pure butter' and the real, although the real may be made from milk or cream. Merely churning sour milk will not necessarily make butter worthy of being called 'pure,' and yet there are those who would have us believe that any product of milk, in any process of decay or adulteration, provided it is not mixed with clean, wholesome animal or vegetable fats, is food fit for an epicure, and the maker of it deserving the praise of his fellow men; but that any product of milk mixed with said animal fat is necessarily poisonous and unclean.

"Butter or milk products mixed with clean animal fats, of the same nature as the fat in milk, is called oleomargarine or butterine. Having been cooked in its manufacture, it does not spoil or become rancid. When butter is at all rancid or strong, decomposition has commenced and it becomes alive with bacteria."

IS OLEO HEALTHY?

We really believe that this question would be an old chestnut, but as the N. Y. Mercantile Exchange and its cats-paw Van Valkenburgh still persist in telling ghost stories obout oleo, we find it about as well to confront them with what Professor F. C. Chandler, the eminent chemist and former President of the Board of Health of the city of New York, says of it. No one can question either the honesty, experience, or skill of Dr. Chandler, and therefore we deem this phase of the oleo question settled.

"For years the poor of this State have been eating rancid butter. Good butter is obtainable in few places. Those who can afford to pay 40, 50, and 75 cents a pound can secure choice butter made of good cream and in a cleanly manner; but very few in the community can afford such a luxury. The others have had to take the butters mixed or doctored, of the butter dealer, which is often dirty and unwholesome.

"Well, then comes the invention of artificial butter. Human beings crave fat, and want something to spread upon their bread. The artificial butter is made of beef suet. Nobody ever said suet was not wholesome. That made oleomargarine. It was made mechanically, in a clean and appetizing manner.

"After this combination had been made for some time another was tried. This was of beef suet and refined cottonseed oil. The latter is eaten by all of us on salad as olive oil. There is no reason in the world why cottonseed oil is not just as good as olive oil. Some people seem to think it is not as good, because it came later and is cheaper. That sort of reason does not appeal to me. The cry against artificial butter comes from men who think that they can control the farmers' votes by making it. It is like the ancient British legislators and the wood farmers. If the farmers only knew it, they will suffer nothing by the free admission into the market of artificial butter, for there are other directions in which they can produce equally good results, and they will make good butter instead of bad. There is no reason why their farms will not produce for them as good returns in other lines as by devoting them to the making of bad butter. Those farmers who can produce choice butter need have no fear of competition, and the others had better abandon the dairy business.

"Not a single chemist of standing in the profession has uttered a word against artificial butter. There are a few third-rate chemists employed by the Dairy Commission, who have made statements to the effect that artificial butter is not wholesome. It is easy enough to see why they should do that. All the big chemists of this country and Europe have pronounced in favor of artificial butter. When I was president of the Health Board of this city I investigated oleomargarine and butterine very carefully, and would have stopped their manufacture at once had I not found that they were perfectly wholesome. On the contrary I found them much better than the poor, cheap butter which was sold in most places, and which became rancid in a very short time. I also called the attention of other chemists to the new invention and secured their opinions."

SENATE BILL 1376.

The same old contest is going on in the courts and Legislature regarding oleomargarine. The most important factor at present is the attempt made by Senate bill 1376, introduced by Senator Hill, and now before the Inter-State Commerce Committee of the Senate, which proposes to place oleomargarine on a basis with whiskey and intoxicating liquors, by removing the protection of the commerce clause of the constitution, by which Congress alone has the right to regulate commerce between foreign nations, the several States and the Indian tribes.

This bill is a bad precedent. No necessity exists for stripping oleomargine from the protection of the constitution any more than many other prepared foods; the constitution was adopted not to make it a lever of oppression of one industry for the protection and building up of another, but for the honest, fair and equitable protection of all. There is no just reason why the sellers of rancid, mixed and adulterated greases infinitely worse and more dangerous to health than many eatables which are absolutely prohibited should be allowed to strut about under the thin guise of dairymen, should thus have the constitution used to uphold them as against the manufacturer of a proven pure and wholesome food substitute because forsooth it threatens their monopoly. We have repeatedly proven that oleomargarine is a cleanly, healthy substitute for butter that is used by the very men who make it and know all about it, because it is cheaper and better than butter of the average quality and sold at a much higher price than the vastly inferior butters. We shall have more to say and produce an array of facts which will convince any one that this bill is a mere dodge of the politicians to secure the farmers' vote.

HOUSEHOLD.

TESTED RECEIPTS.

Every receipt here given is original, has been practically tested by the AMERICAN ANALYST and is therefore confidently recommended.

CREAM TOAST.

Heat one pint of milk, stir into it one large tablespoonful flour, wet with a little cold milk. Add one large tablespoonful butter, and one cup of cream, if you have it. Place on the back of the stove to keep hot; then toast nicely some bread, dip into the cream, put into a dish, and when you have sufficient toast, pour the cream over it and serve.

GRAHAM PUFFS.

Beat one egg thoroughly; then add one pint sweet milk, one pint graham flour, and a pinch of salt. Beat all briskly with egg-beater, pour in hot, greased gem pans, and bake in hot oven.

TWO NEW SANDWICHES

For teas and receptions: One is made from thin slices of brown bread, spread with a very little butter, then with a layer of chopped English walnuts and almonds. The other is made from white bread, spread with chopped and stoned olives, mixed with mayonnaise.

GLUTEN MUFFINS.

Mix two cups gluten flour and two teaspoonfuls baking powder; stir in one egg that has been well beaten, two cups of milk. Mix thoroughly, and pour into hot gem pans that have been well greased.

FRENCH OMELETTE.

One quart of milk, one pint of bread crumbs, five eggs well beaten, one tablespoonful flour, one onion chopped fine, chopped parsley; season with pepper and salt. Have some butter melted in a frying pan; put the mixture in, and when the omelette is brown, turn it over. Double when served.

OMELETTE SOUFFLE.

Stir five tablespoonfuls sifted flour into three pints of milk; strain through a sieve; add the yelks of eight eggs, beaten very light, and just as it goes into the oven, the whites beaten stiff. Bake quickly.

BREADED EGGS.

Boil hard and cut in thick, round slices; pepper and salt, and dip each in beaten raw egg, then in fine bread or cracker crumbs, and fry in butter that is very hot. Drain off every drop of grease and serve hot.

RULES FOR SEASONING.

BY MARY F. HARMAN.

A little book published not long ago gives several rules for the compounding of powders and flavored vinegars for use in cooking, and as it may not be within the reach of all, a list of the principal recipes may be welcome to house keepers.

Many a simple dish may be quite changed by the addition of a little sauce, a few capers or chopped olives, and in the same way a teaspoonful of curry or ragout powder will make a savory stew out of one not otherwise very appetizing. Curry powder sufficient to last a year may be bought for 25 cents a bottle, but for those who would like the satisfaction of making it at home, the rule is given.

Curry Powder.—Three ounces of turmeric, 3 oz. of coriander seed, 1 oz. black pepper, 1 oz. ginger, 1 oz. mustard, ½ oz. allspice, ½ oz. cardamom seed, ¼ oz. cumin seed; pound all the ingredients in a mortar until reduced to a fine powder; sift, bottle, and cork.

Filet (pronounced *feelay*) powder, which gives its name to the famous gumbo filet soup so popular in the South, is made by taking the very young and tender leaves of the sassafras and drying them thoroughly in a cool, airy place. They are then pounded in a mortar, pressed through a sieve, and kept in a closely corked bottle.

Ragout Powder.—Half an ounce of ground mustard, ¼ oz. ground mace, ¼ oz. cloves, ¼ oz. ginger, 1 oz. salt, ¼ oz. grated nutmeg, ½ oz. black pepper, ½ oz. dried lemon peel, grated, dash of cayenne; mix well together, run through a sieve, bottle, and cork. A teaspoonful added to a sauce or ragout is a great addition.

Large grocery houses keep the French paste for soups, and they are sold in boxes, containing twelve little tablets, for 25 cents a box. One of these is put in the tureen and the soup poured over. It gives a brown coloring and imparts a very agreeable flavor.

A home-made soup powder is made of lemon peel, thyme, sweet marjoram, and parsley, 1 oz. each. Dry in a warm oven, pound in a mortar, rub through a sieve, add 1 drachm of powdered celery seed; bottle and cork. Add 1 teaspoonful to 1 quart of soup.

Imitation of Worcestershire sauce is made by adding to 1 quart of vinegar ¾ oz. of cayenne, 3 cloves of garlic chopped fine, 5 anchovies mashed, 12 whole cloves bruised, and two blades of mace. Cover, and stand aside over night. Next day strain, add 1 gill of port wine, put it in a demijohn, cork, and stand aside for ten days; then bottle, cork, and seal. Half this quantity would be sufficient to last some time.

Flavored vinegars are a great addition to certain dishes, and tarragon is especially useful, as it improves all salad and fish sauce.

Tarragon Vinegar.—Put into a wide-mouthed bottle one cup of freshly gathered tarragon leaves, and cover with a quart of good cider vinegar. Cork the bottle and stand aside for two weeks, shaking frequently; then strain and squeeze through a flannel bag. Pour into small bottles, cork, and keep in a cool place.

Onion Vinegar.—One quart of vinegar, 1 teaspoonful of salt, 2 teaspoonfuls of white sugar, 2 large Spanish onions. Grate the onions, mix with them the salt and sugar, let stand two hours, and add the vinegar. Turn into bottles, and shake every day for two weeks. Then strain through a fine cloth, bottle, and cork.

Celery Vinegar.—One quarter of a pound of celery seed, 1 quart of cider vinegar, 1 teaspoonful of salt, 2 teaspoonfuls of granulated sugar. Mix all the ingredients together, put into a porcelain-lined kettle, and bring to the boiling point. When cold, put in a large bottle, and shake every day for a fortnight. Then strain through a fine cloth or filter, bottle, and cork tightly.

Chili Vinegar is made by infusing fifty of the small foreign bird-peppers (small red and yellow peppers about 1 inch long) in 1 pint of the best white wine vinegar for two weeks.

Horseradish Vinegar.—Six tablespoonfuls of scraped or grated horseradish, 1 tablespoonful of white sugar, 1 quart of vinegar. Scald the vinegar, pour boiling hot over the horseradish, steep a week, strain, and bottle.

The same book gives a rule for mock olives, which some one may like to try when green plums are again in season. One-quarter peck of green plums, 2 quarts of cider vinegar, 1 oz. of white mustard seed, 2 heaping teaspoonfuls of salt. Add the mustard and salt to the vinegar, pour into a porcelain-lined kettle and bring quickly to the boiling point; pour it while boiling over the plums, and stand away over night. In the morning drain off the vinegar, make it again boiling hot, and pour it over the plums. When cold, put into bottles and cork.

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BUTTER SUBSTITUTES.

BY CHARLES M. SELTZER IN HOUSEHOLD MONTHLY.

Experience is the best teacher, especially to a prejudiced mind. The laws in Pennsylvania against artificial butter, no matter what its name, are strictly enforced for the benefit of the genuine butter-maker, to protect his industry, and for no other purpose. The arguments advanced to show that it is for the benefit of the health of the community, and to protect from a product that is derived from dirty materials and unclean processes of manufacture, are false in their premises, untrue in all particulars, in so far as they relate to first class manufacturers. The average Pennsylvanian is prejudiced against artificial butter, mainly because of ignorance concerning what it is and how it is made. This is an instance in which ignorance is not bliss to the majority of butter users, and it is not folly for them to become wise on a subject that concerns their health and their wealth.

A personal investigation of the processes of manufacturing artificial butter, and lard substitutes, in the largest factories in the world, together with the use of them for a month in midsummer, are the sources of information for whatever may be said in this article. I may also be credited with greater candor if I confess to being the owner of a farm with twenty head of cattle on it.

"Oleo," the popular name for artificial butter, is made from cotton-seed oil, butter from cows' milk, neutral lard, and oleo oil. These ingredients, in varying proportions, together with salt and coloring, are all that are used in the best grades of oleo. There is a very low grade made for export into hot climate countries that contains stearin (another derivative of beef suet). Very little, if any, of this is used in this country, as it tastes too much like tallow candles; so it will not be considered at present. A description of a trip through Swift's butterin factory in Chicago, may best serve as an illustration and explanation of the entire subject, as it is to be seen in a first-class factory. The capacity of this factory is forty-eight thousand pounds a day. Thirty-one thousand pounds were made the day of this tour of inspection and instruction (and yet the price of best butter is as high as ever).

In the first department are large vats, in which cream is placed to ripen. This cream is then churned into butter, and the entire contents of the churn are used to flavor the butterin. After the churning, the contents of the churn are run into a tank on scales and is weighed. Next, a certain proportion of neutral is run into the tank. This neutral is pure, chilled leaf-lard, cooked at a low temperature, and is then put into a bath of pure, cold water for about forty-eight hours, which removes all flavor, leaving a perfectly neutral material. It is added to the churned butter in a liquid state. The next addition to the tank is oleo oil. This is made from selected beef fat, chilled in ice water, and then melted at a temperature of 140 deg. F. From this is pressed a perfectly soluble oil, known as oleo oil. The last fat ingredient added to the tank is cottonseed oil. This is always of the finest quality, and is used to soften the texture of butterin. The proportions are added by weight,and vary according to the grade of butterin to be made. Ordinary grade contains about five parts of butter, six of cottonseed oil, fourteen of oleo oil and seven of neutral. Finest grades contain about 25 per cent of butter, and the other ingredients vary according to the season. The contents of the tank are next run into a mixing vat, where they are thoroughly mixed, and where coloring matter is added. From here it is run into long tanks that are filled with ice water. This ice water hardens the mixture at once, and then dashers crumble it up and wash it through the water down to the end of the long tank. There it is gathered on trays and taken to a warm room, so that it will quickly soften and be ready to work. As soon as it is soft enough it is put upon a revolving table, where it is worked by machinery and properly salted. From here it is sent to the next lower story and worked into prints and rolls of all descriptions. It is then wrapped in paper, packed in boxes, and stored in cold storage rooms until shipped. Large quantities are not printed, but shipped in bulk in white ash tubs. Some low grade exports are shipped in tin cans. The salt used is a fine imported salt that is said to cost $20 per ton. American salt could be bought for $7 per ton. The latter is not used because it takes about three times as long to dissolve, and hence it impedes the process of manufacture too much. Aside from this, the American salt would be just as good.

The coloring used in all the oleo factories is of the same make; a popular brand made in New England (Vermont, I believe). It is principally annetto. It is the same make as the farmers and "creameries" use to color genuine butter.

All the utensils and vats used in the process of manufacturing are scalded and cleaned thoroughly every day. The floors are scrubbed and flushed with hot water twice a week, and, in fact, everything is kept scrupulously clean. This must necessarily be so, because it would never do to have it otherwise where so large a product that so easily shows the effects of dirt or want of cleanliness is made. The senses of sight, taste and smell all put us upon our guard against unclean butter. It is hardly possible that shrewd business men would permit an industry that involves hundreds of thousands of dollars to be jeopardized by want of cleanliness, either in the materials used or in the process of manufacture. So I think that as far as cleanliness is concerned, all minds can be at ease. From what I know of many farm establishments I will give fine oleo the preference as to cleanliness. A good many old loves are being ruthlessly torn asunder nowadays. The "old oaken bucket that hung in the well" is no longer a joyful memory, but makes one shudder to think of the fungi and germs that infested it. And the open well that makes one thirst for its cooling waters, and as seen in many an artist's rural landscape to recall a youthful pleasure, is now among the rude devices of the past. Its open top, sometimes partly closed, was ever a catch-all for all sorts of dust and dirt, and large and small animals, the latter going there purposely or accidentally. Don't you remember:

"Ding! Dong! Bell!
Pussy's in the well!"

As for healthfulness, there can be no question if the ingredients named are fresh and clean; for they are only what we use daily in some part or other of our food. Every one with good digestion (would that there were no other!) enjoys good butter; a fine bit of fat on the roast beef; the best of lard, if it must be used in cooking, and fine cotton-seed oil. The latter is best enjoyed when labeled "imported olive oil." As there is nothing else in oleo—as it is chemically butter—looks, tastes, and smells like butter; melts like butter (at about the same temperature); cooks like butter, and, in fact, is so much like butter that skilled butter makers cannot tell it from butter of their own make; and experts must resort to chemical tests before they can tell it from the genuine cow butter; its healthfulness is a good bit less questionable than some other things that are constantly consumed in large quantities. No disease condition, acute or chronic, has ever been traced to it. There are no germs in it. Tuberculosis has been traced to pure cow's butter by good authorities.

As to cost, the best oleo sells at retail for about one-third less than the best butter. The manufacturer pays $600 for license and 2 cents per pound revenue to the United States government for use in the States. There is no revenue on export goods.

THF FOOD VALUE OF SUGAR.

At a recent meeting of the Royal Society, a paper on "Sugar as a Food in the Production of Muscular Work," was read by Dr. Vaughan Harley, who first gave the chemical reasons that led him to believe that sugar was the principal factor in the production of muscular energy. He then went on to prove that it could be experimentally demonstrated that the addition of large quantities of sugar to the diet caused an increased capability of doing muscular work. By means of the ergograph it was possible to estimate the amount of work accomplished under various circumstances, by the middle finger of each hand, weights of 3 kilogs. and 4 kilogs. being raised. The total height to which the weight was lifted, being multiplied by the weight used, expressed in kilogramme metres the amount of work accomplished. The first step was to ascertain the value of sugar when taken alone in the production of muscular work. During a twenty-four hours' fast on one day water alone was drunk; on another 500 grammes of sugar was taken in an equal quantity of water. It was thus found that the sugar not only prolonged the time before fatigue occurred, but caused an increase of 61 to 76 per cent in the muscular work done. In the next place, the effect of sugar added to the meals was investigated. The muscle energy producing effect of sugar was found to be so great that 200 grammes added to a small meal increased the total amount of work done from 6 to 39 per cent. Sugar—250 grammes—was now added to a large mixed meal, when it was found not only to increase the amount of work done from 8 to 16 per cent, but increase the resistance against fatigue. As a concluding experiment, 250 grammes of sugar was added to the meals of a full diet day, causing the work done during the period of eight hours to be increased 22 to 36 per cent.

ADULTERATION.

SPOILED SARDINES.

A rigid investigation is said to have been instigated by our health board into the poisoning of a woman and her two children, who are in Gouverneur hospital deathly sick from eating spoiled sardines.

From the cellars or shelves of jobbing houses a horde of East side venders are said to procure their stock, invariably consisting of merchandise unfit for use. This stuff, oftentimes reeking with poisons formed by the slow process of decay, is carted about the tenement-house districts and offered at such seductively low prices that the hungry poor cannot resist the temptation to purchase.

Joseph Morris purchased several boxes of sardines from a push-cart peddler unknown to him yesterday. All the family ate of the spoiled fish for supper, and Mrs. Morris and the two children were soon after taken violently ill. They went to Gouverneur hospital, taking along a box of the sardines. On opening the lid of the box the house surgeon declares the stench that rose was sufficient in itself almost to make any one ill.

Morris will accompany a health inspector through the East side marts to-day and endeavor to identify the man who sold him the fish.

The sardines were sold to Morris at two cents a box, and it is figured that he must have made at least one cent profit. No jobber or merchant or wholesaler could afford to sell the fish at that price if they were good, and he must have known they were unfit for use when he sold or gave them away. He is therefore guilty of a serious offense.

For our part, we are not disposed to believe that any jobbing house in New York would sell such stuff for the sake of one cent a box, but are inclined to the opinion that these decayed sardines were thrown into an ash barrel or dump and recovered from there by these unscrupulous East side venders.

Such things should not be allowed. A health board which does not discover and put a stop to such goings on until someone has been made sick does not perform its duty. Every day one can see parties carrying decayed meat, fish and vegetables through some of the East side streets, but only occasionally do we hear of a lot being seized and destroyed.

BARYTES AGAIN.

The concern which has been offering barytes to confectioners as a weight making adulterant has found a new line of customers among the sausage case trade, as may be judged by the following clipped from an exchange in New York:

Several of the casings dealers in this city and vicinity have recently received a very curious communication. It emanates fron a concern which handles a certain kind of metallic earth, and suggests that the casings dealers adulterate their salt with this product. Being the heaviest of the earths its use would add greatly to the weight of casings in bulk.

We do not blame the concern in question for making this suggestion to the casings dealers. We know the scoundrel who engineered the proposition, and who gave the "earth" concern to understand that the casings dealers would be glad to secretly adulterate their salt with anything, injurious or otherwise, that would add to the weight of shipments.

ADULTERATED IPECAC.

During the past month the customs regulations at New York respecting the inspection of drugs have been rigidly enforced. The last drug to come under the notice of the customs officials is crude ipecac. Recently a considerable quantity of spurious and stemmy root has been rejected. A reporter for the *Commercial Bulletin* questioned several importers and learned that competition has become so keen that in order to conceal foreign substances some firms powder the roots. If the root did not contain so many properties valuable for medicinal purposes this grinding of stems roots and grass together would not matter. But some of this ipecac which has been rejected would not contain the desired power in the minute doses prescribed by a doctor.

Dr. Jewitt said: "This ipecac was absolutely unfit for commercial purposes. A great quantity of stem was in these importations, and if the dead matter was not removed before the drug was prepared for medicinal purposes, the real properties would be materially reduced and practically unfit for use. In regard to Carthagena ipecac, it is absolutely unfit for medical purposes, and has always been rejected by the United States drug inspectors. I know that this ipecac is worthless, and besides the packing is faulty, the root old and mixed with long stems."

ADULTERATION OF COCHINEAL.

According to Dr. Teyzeira (*Pharm. Zeitung*, p. 505) there is found in commerce an artificial cochineal prepared by coloring exhausted cochineal powder with rosanilin and forming into grains and sprinkling them with lime. They are easily detected by their irregular form, by being heavier than water, and forming a paste with the latter.

COFFEE AND CHICORY.

Thomas Cawthorne, 249 Upper Allen street, was summoned for having, on December 12, sold to Inspector Harrison ½ pound of coffee containing 70 per cent of chicory. The defendant said he sold the article as he bought it. Mr. Sayer informed the magistrates that the article was enclosed in a packet on which there was a label stating that "this is sold as a mixture of chicory and coffee," but that, he held, was not sufficient in itself to cover the offence in this case. Section 8 of the Act provided that no person should be guilty of an offence in this respect to the sale of an article of food mixed with another substance—as the mixture of chicory with coffee—if the mixture was not intended "to fraudulently increase its bulk, weight, or substance." He relied on the words quoted, and submitted that the view of the law which existed at the present time was that it was the duty of Magistrates to ascertain whether, in their opinion, the facts proved that the admixture of the cheaper commodity was so overwhelming as to justify the conclusion that it had been added to constitute a fraud. He quoted three cases in support of this view, in two of which the mixture of 40 per cent and 85 per cent of chicory respectively, had been held by the High Court, on appeal from justice's decisions, to constitute a fraud, while the third case was remitted to the justices for reconsideration to elicit an expression of opinion. Evidence of the purchase having been given, the Magistrates said they were of opinion that the Corporation in this case were asking them to take upon themselves the onus of fixing the proportions of coffee and chicory that should be used in mixing, and they were not inclined to take that duty. They, therefore, dismissed the case. James Flynn, grocer, Allen street, was summoned for selling adulterated coffee. Inspector Harrison bought half-a-pound of coffee at defendant's house, which contained 50 per cent of chicory. Defendant pleaded guilty, stating by way of excuse that his wife who was ignorant of the business, sold the mixture. Defendant was fined £1, including costs.

ADULTERATED LAGER BEER IN ENGLAND.

Vendors of lager beer should beware to secure themselves against dangers like the following:—At Burton police court, on the 2d inst., William H. Ravenscroft, commercial traveller, and John Fearn, were charged with selling lager beer which was not of the quality demanded by the purchaser, and which contained salicylic acid, injurious to health. Mr. W. A. Willcock, of Wolverhampton, prosecuted; and Mr. Stone (Derby) represented Mr. Ravenscroft. Mr. Jones, County Analyst, showed that the acid was injurious to health when taken with food, because it impeded the process of digestion. Ravenscroft was fined 20s. and 11s. costs in each of two cases, and £5 and costs in a third case. It was thought that Mr. Fearn was a victim, and he was ordered to pay the costs, 11s. 6d.

We have repeatedly pointed out how objectionable the admixture of powerful drugs, such as salicylic acid is in articles of food or drink. In this instance the percentage was enormous, being no less, we understand, than 14 grains per gallon. Publicans who unwittingly or otherwise sell lager beer so heavily dosed with dangerous drugs, as appears to be the case in the present instance, run grave risks, and they would do well to obtain a warrant for the lager beers they use that they are free from preservatives. So far as we are aware, this is the first case in which a prosecution has been successfully sustained for the admixture of preservatives to food stuffs. The question of the repression of this practice is one, however, that has for a considerable time engaged the attention of the medical profession and those concerned with the enforcement of the Food and Drugs Acts, and now that a conviction has been obtained and magistrates hold the admixture of these powerful drugs to be adulteration, publicans should take care that they are not made the victims of the brewers and dealers using such chemicals.

FALSIFICATION OF BLACK PEPPER.

The *National Druggist* answers the question, what are the usual adulterations of black pepper (the ground pepper of commerce), and also the best way to detect same. I have noticed little articles in the *Druggist* on this subject from time to time but do not recollect any full account of same. If such has been published, please refer me to same. Could you undertake to make examinations of samples sent you?

The number of substances, which have been noted from time to time as adulterants of ground black pepper, is very large, and it would require reference to the indexes of every volume of the *National Druggist* to cite them. The following, however, comprise the principal articles used in the commercial falsification of pepper (on a large scale): 1. Kernels of the olive: The extent to which this falsification was carried a few years ago, would be almost incredible, did not authoritative reports, emanating from French, German, Italian, and other commissions not attest it. Indeed, so boldly and shamelessly was the preparation of, and trade in, this material, for the open and avowed purpose of adulteration, that the manufacturers (usually expressers of olive oil) sent their circulars to parties in the pepper and spice trade with as little precautionary attempts at secrecy as they would have adopted with an ordinary price current. The detection of the adulterant was at first rather difficult, but micro-chemical methods of examination have been devised, which leave but little to be desired in this direction. The best test that we have used, is a tincture of iodine, made by dissolving 13 parts of resublimed iodine in 240 parts of alcohol of 90 deg. Mix 80 parts of the tincture with 100 parts of the pepper, cover and let stand an hour or so. On examining the material under the microscope the fragments of olive kernels will be found to be stained a clear yellow, which makes them very conspicuous among the black and maroon of the true pepper.

The stems of the pepper plant are frequently and to a large extent used as an adulterant of the ground pepper. These may be discovered by the aid of the microscope, by the difference in their fibrous structure, etc. A whole host of other vegetable structures are used for the same purpose. Earthy matters, steatite, etc., are also used. Incineration and examination of the ash easily reveal them. Among chemicals, lead chromate has been extensively used. The best method of detecting it is to incinerate a few grains of the suspected sample, and test for the chromic acid reaction.

Among the adulterants most difficult of detection is buck-wheat flour, the starch grains of which and of black pepper are so nearly identical, as to be practically undistinguishable under the microscope. This adulterant, as well as toasted bread crumbs, can usually be detected by means of the hairs of the grain, or fragments of them, which are always present, even in the finest flours.

As stated, the adulterants are almost innumerable. The following is the technique of examination which we are in the habit of using, and which we have found to be the simplest and most reliable.

The microscope is fitted with a polarizing apparatus, a 2-inch eyepiece and a 1-inch objective. This stand is placed upright and the polarizing apparatus turned until the light reflected by the mirror is nearly but not quite extinguished. A pinch of the pepper to be examined, is dropped on a slip moistened with water and covered with a cover-glass. The apparatus is now directed toward the source of light (direct illumination), and on examination the pepper is seen as dark granules on a deep bottle green ground. The starch granules, fragments of olive kernels, vegetable fibres, etc., show up brilliantly. Having determined, with this feeble magnifying power, the presence and approximate amount of adulterants, higher powers and micro-chemical reagents may be resorted to, to determine the nature, etc., of the adulterating material.

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How strange the tricks that fortune plays us!
She wins our love and then betrays us,
We toil for wealth, and we receive it,
Just in good time to die and leave it.

Merchant (to applicant.)—Do you think you know enough to assist me in the office?

Boy—Know enough! Why, I left my last place because the boss said I knew more than he did.

HYGIENIC.

DEADLY PASSENGER CARS.

We are all going to be poisoned now by the deadly passenger car. In the laboratory of the Imperial Board of Health of Germany, experiments were made between January, 1891, and July, 1892, by which the seeds of consumption were found in abundance in the dust collected, not only on the floors but on the walls and seats of cars. Samples of dust were taken from 45 compartments of 21 different passenger cars and 117 animals were inoculated with them. Part of these died very soon thereafter of various contagious diseases before they had time to develop consumption; of the rest, killed four to six weeks after inoculation, three had tubercles. These three, however, were inoculated with sleeping car dust, taken, not from the floor, but from the walls, cushions, and ceilings. Bacteria at the rate of 78,800 per square inch were found on the floor of a fourth class car, and 34,400, 27,200, and 16,500 per square inch on the floors of the third, second, and first class cars. Thus, even in the latter, the average passenger, who usually has at least half a compartment to himself, say 3,000 square inches of floor, has an army of 49,500,000 deadly enemies aiming at his vitals on the floor alone, to say nothing of other millions in front and rear, on both flanks and overhead. It would seem impossible to escape; but the board of health is said to have reported measures for removing or reducing the danger, which the railroads are considering.—*Railroad Gazette*.

UNRELIABILITY OF SMALL FILTERS AND THE DANGER OF WELL WATER.

BY PROFESSOR R. KOCH.

In order to complete the discussions of the relations of water filtration to cholera, I must now, after this discussion of filtration as it is carried out in the great water works, shortly consider filtration, as well artificial as natural, of water in small quantities. For domestic filtration, i. e., for the use of a family or of one house, there are some filters of a most varied construction at our disposal. Of these there are not many which can keep back micro-organisms, and therefore infectious matter, from the water, and those which can do so—e. g., those made of silicious marl, aluminous clay, asbestos and celluloid—remain only a few days impermeable to germs, and very soon fall off as regards the quantity of water they supply, and require a very careful handling. I am not aware of any small filters which suffice for practical wants for any length of time, and I should not advise depending upon small filters in times of cholera. Far better are the results of natural filtration. Rain water when it sinks into the ground and ultimately becomes subsoil water, passes through far thicker layers and with far less rapidity than river water when passing by artificial filtration through sand filters. If the soil is only sufficiently granulated, we have in soil filtration a much more perfect process than is at our disposal in artificial filtration. As a rule, the soil is of a material much more finely granulated than the comparatively coarse-grained sand of the filter, and it is fair to expect that the subsoil water, after passing sufficiently thick layers of this finely granulated soil, will be either very poor in micro-organisms or quite free from them. This is confirmed by the investigations of C. Fraenkel, who has shown that subsoil water, even in a soil which has been much and for a long period contaminated, as in the case in Berlin, is quite free from germs. In other places the same results have followed from investigations made on this point. We have, therefore, no reason to keep out of consumption the subsoil water which can be found nearly everywhere. On the contrary, we cannot find a better filtered water and one more protected against infection. The only difficulty is to bring this perfectly purified water into consumption without its being later on again contaminated and infected. In this respect great errors are still most inexplicably made everywhere.

If the subsoil water is raised by means of an iron conduit pipe, the possibility of contamination is avoided. The soil is so close to the pipe that no real disturbance of the filtering layers of the soil are produced by the boring. All liquids, even those most strongly contaminated, must before reaching the depth from which the water is raised, pass through thick and efficient filtering layers, by which they are rendered quite absolutely free from infectious matters. Especially is this the case if the boring goes through an upper impermeable layer into deeper sand or gravel layers containing the water. Water coming from such depths will certainly nearly always contain some iron, but this is, in the case of a single pump, as also in the case of large filters, no reason for rejecting the water. It will only be necessary to free the water from iron according to the methods above described, i. e., by exposure to air and filtration, in order to obtain quite excellent water, in no way inferior to the best spring water. For this purpose the method given by Pietke is to be recommended, as it has proved itself to be excellent at Hamburg in the case of a number of pumps giving water containing iron. The most rational way of obtaining subsoil water is undoubtedly by the use of iron pumps. There is, it is true, the objection against it that the pumps gradually bring up less and less water. But it has been observed this has nearly always been due to the fact that the metal sieve, which is intended to protect the pipe at the lower punctured end against sand, has been stopped by mud and become incrusted. But it will be easy to find a means of avoiding this by giving such a construction to the lower end of the pipe as to enable the metal sieve when stopped up to be removed and to put a fresh one in its place. Iron pumps are unfortunately still too little used. Almost everywhere the subsoil water is obtained in the old-fashioned but most irrational system of wells. The construction of the well is such that, from underneath—*i. e.*, from the subsoil water, if the bottom of the well is deep enough and is in good filtering soil—only good filtered water can come into the well. But from above the well is nearly always exposed to very serious contamination. Very often the wells are quite open or insufficiently covered; but even if they are covered above by masonry, or by iron plates, nearly always in the uppermost layers of the soil surrounding the well, which in summer become quite dry and in winter are exposed to frost, there are cracks and fissures which allow unfiltered water coming from these unfiltered layers to leak into the well. Even masonry or cement is, when subject to these influences, so cracked and fissured as to be unable to prevent the water flowing from the surface of the soil to reach the well. But this very water can be very badly contaminated, for the water of the well is used at the well for laundry purposes and for the cleansing of domestic utensils. Contaminated in this way, and possibly infected, it finds its way through the cracks and fissures of the covering back into the well. Besides, the wells are generally situated in the lowest part of a district. As a result they receive the filth of over-full dung heaps, gutters, etc.; and often the rain washes toward the well filth from human dwellings, even if situated at a considerable distance. The fact that epidemics having their source in well water are generally observed to occur after a heavy rainfall is to be ascribed to the above fact. A proof that even cholera infection can have its source in a well contaminated in such a manner, is to be found in the case of a well in the neighborhood of Altona, into which filth had been allowed to pass from the surface. As to this case, I shall have to report in another paper.

Wells, constructed no matter how, should not be tolerated in future, as they are exposed to contaminations of this character, even if there is only suspicion that such contamination might take place. It will certainly not be easy to arrange that wells already in existence, even if badly constructed and dangerously situated, should be given up; but that is not always necessary. It will be comparatively easy, in most cases, so to alter the construction of the well as to remove all danger of contamination from above. It is only necessary to give to the well the same protection, or approximately the same protection, against contaminating percolations by means of filtering layers of soil such as exist in the case of a simple pump To achieve this, one should proceed by filling the well up to the highest water point with gravel, and over the gravel with sand to the very top. Here it is, of course, assumed that the well is already provided with an iron pipe, or, if this is not the case, that it will be provided with one before the gravel and sand are put in. In this way the well is turned into a pump, with the advantage over other ordinary pumps that its lower ends dip into a layer which gives no resistance to the subsoil water. If it is proposed to keep the water supply of the well quantitatively intact in order that, for instance, for purposes of extinguishing fires, a certain quantity of water should be at hand, there should then be erected above the highest point reached by the well water a construction of masonry or iron capable of lifting the protecting sand covering. But the last should never be less than two metres deep. It is also to be recommended that the pump should not be erected immediately over the well, but some distance from it, and that it should be put into communication with the well by a lead pipe. This would prevent the water of the well, which, when used for washing and other domestic purposes, becomes foul, from leaking into the soil around. Wells protected in this or similar methods, by good filtering layers, give the same protection against the infection of water as is given by the sand filtration of the great waterworks. In fact, they really give a greater protection, for they are not exposed to the many disturbances in the process of filtration referred to previously, and are also not affected by frost. So much attention is now being given to perfecting as much as possible the water supply of the great waterworks, that it is important not to lose sight of the domestic water supply by pumps and wells. By improving the wells in the manner explained above, the spread of cholera, in so far as it is due to water, can be restricted to a great extent. It is just in this respect that a great deal can yet be done.—*Food and Sanitation*.

As the Chicago River will remain open seven days in the week, visitors to the World's Fair are likely to imagine that the Limburger cheese exhibit is larger than it really is.

MEDICAL.

IS BORIC ACID INJURIOUS?

Dr. L. Tortchinsky, in the *Gazette Hebdomadaire de Bordeaux*, says he used boric acid in 240 cases of typhoid fever in the course of an epidemic, and reports excellent results; only nine patients died, and they succumbed during the period of convalescence because they got out of bed too soon, or committed errors in diet. The 231 other patients made a rapid and complete recovery. In all the cases the patients were given a dose of castor oil with from five to ten drops of oil of turpentine. After this mixture had operated, the administration of boric acid was begun, the remedy being given internally, either in powder or in solution, in doses ranging from twelve to fifteen grains for an adult, three or four times a day. When there was bronchitis the boric acid was associated with expectorants and with hydrochloric acid. As a general rule, at the end of from three to five days the fever and the diarrhœa underwent a noteworthy diminution, the tympanites disappeared, the dejecta lost their odor, and became normal in appearance, the urine became abundant and in every way normal, the tongue and skin grew moist, and the general condition was good. As soon as the amelioration was well marked, the use of the acid was discontinued and tonics were ordered. Under the influence of this treatment the disease followed a favorable course, its duration was somewhat diminished, and complications were very rare. The most decided effects were obtained in cases treated early. The author has found that the effects of the boric acid treatment may be increased by combining with that drug small doses of ascetanilide, quinine, naphthaline, or salol. The mixture with quinine is especially useful in the last stages of the fever, when there are ataxia, delirium, and other cerebral symptoms; it is useful also in cases of relapse. The author has never observed any harmful effect from the use of boric acid. He has also produced satisfactory results with this acid in the treatment of the summer diarrhœa of children.—*Exchange.*

But this does not by any means prove that the addition of boric acid to milk or food for infants and invalids is not injurious.—[ED. AMERICAN ANALYST.

SOME POPULAR ERRORS IN REGARD TO SKIN DISEASES.

Though many of our colleges completely ignore the study of dermatology, the leading universities have awakened to the fact that it is a subject not to be neglected, and examinations are now even made compulsory. It is just as important to make a correct diagnosis between an eczema and psoriasis as it is between scarlet fever and measles, variola and varioloid. It is presumable that the study of cutaneous diseases is neglected to such an extent on account of their unimportance; but in refutation of this, one has only to refer to the literature of the subject; to such books as Hebra's Diseases of Skin, in five volumes, of three or four hundred pages each; to recall such names as Hebra, Kaposi, Neuman, of Vienna; Sir Erásmus Wilson, Tilbury Fox and Addison, of England; Bulkley, G. H. Fox, Morrow, Piffard, White, Hyde, and a host of others in this country—men who have devoted their life study to this subject, and who have no superiors in any branch of the medical profession.

Familiar appellations for skin diseases are not confined to the laity. The most diverse, ridiculous and unmeaning terms have been applied to these affections, such as tetter, that usually refers to eczema, or may mean psoriasis or lupus. Bakers' itch, grocers' itch, milk crust, tooth rash, are also used to designate some form of eczema.

Liver spots may refer to chloasma, a pigmentary affection, or to tinea versicolor, a vegetable parasitic disease.

The itch, to scabies, a disease caused by an animal parasite, known as the acarus scabiei. The expression, army itch, would lead one to suppose that it was distinct from scabies, yet we recognize it as the same disease.

Blood boil has no scientific meaning and is applied to various diseases.

Hives is recognized by some as urticaria; by others as varicella (chicken pox).

Shingles means herpes zoster, an acute disease, characterized by an eruption of groups of vesicles upon an inflamed base along the course of certain nerves.

Prickly heat usually refers to a disease known as miliaria, an affection of the sweat glands.

Dandruff, to the dry form of seborrhœa of the scalp.

Black heads (flesh worms), to comedo, a collection of sebaceous matter in the distended sebaceous glands. The little black heads are caused by the accumulation of dust and pigment.

Ringworm is a vegetable parasitic disease, caused by the trichophyton fungus, and is known as trichophytosis.

Barbers' itch is caused by this same fungus upon the bearded portion of the face, and is designated by the term tinea sycosis.

Fish skin disease is a congenital affection characterized by dryness and scaling of the skin. Its proper name is ichthyosis.

Chap is usually a mild form of eczema, attended with cracking of the skin.

As to the etiology of skin diseases, how often we hear the expression, bad blood. Has this term any meaning? If it has, it must mean a depraved state of the blood that can be recognized by chemical reagents or by the microscope; but Prof. Bulkley says: "Chemical and microscopical studies fail to show there is bad blood in any of the diseases of the skin. It is supposed the impurities in the bad blood find exit through the skin, and in so doing take the form of an eruption; consequently it is harmful to remove them. Patients frequently express themselves as very solicitous about the sudden cure of a skin disease. The consequence, in their opinion, might be disastrous by the driving in of a disease that might attack some internal organ. Nothing could be more absurd, for it is absolutely impossible, in this sense, to either drive in or drive out a skin disease. The blood has little to do with these diseases. There are affections as peculiar to this organ as to any other, entirely localized, depending upon changes in the tissues themselves. Others are caused by parasites; still others by nervous disturbances. It is evident that the much lauded blood purifiers, for cutaneous diseases, are, to say the least, useless. A patient may get well while taking these quack nostrums; the fact is then extensively advertised. This is about on a par with the announcement of lottery companies of the fortunate individuals who have obtained prizes. The tens of thousands who are not so fortunate are never heard from."

The majority of skin diseases are regarded as contagious, and the fear is expressed that those who come in contact with the afflicted are liable to become affected; but this is far from the truth, for out of the hundred and more diseases that may affect this organ, only two or three, besides the parasitic diseases, are really contagious.

As there are so many popular errors in regard to cutaneous diseases, the following aphorisms may be of some interest The statements are made either upon the evidence of well recognized authorities or as a result of my personal experiences:

I. You cannot be successful in treating diseases of the skin without a thorough knowledge of general medicine. This, I think, will be accepted as a selfevident proposition.

II You connot cure them too quickly.

III. If they are cured, they will not act deleteriously upon any internal organs. Hebra says: "Our warmest endeavors are to find means of terminating these diseases as speedily as possible. Were we only in possession of remedies which produce cures thus rapidly we should have no anxiety in regard to the appearance, from this cause, of metastasis, or of any other consecutive disease."

IV. Arsenic is not a specific for cutaneous diseases; in fact, it is less frequently used by those who have made a special study of these diseases than by the general profession.

V. You cannot drive in or out diseases of the skin. "At this day no educated physician believes in employing medicine with a view to either the so called 'driving out' or 'driving in' of a disease of the skin."—*Hyde.*

VI. The great majority of these diseases, contrary to the general idea, are not contagious; only one or two, besides the parasitic diseases, out of the hundred and more that may attack this organ.

VII. Freckles are not always produced by the sun's rays. Cases are reported where they have appeared upon the portions of the body of young girls that have never been exposed to the direct rays of the sun.

VIII. Tinea tonsurans (ringworm of the scalp) does not occur in adults, though Tilbury Fox has reported one such case. If it ever occurs, it is extremely rare. Neither Duhring nor Piffard ever met with a case.

IX. Tinea versicolor, another parasitic disease, does not occur in childhood. "Children are exempt."—*Weyl* and *Gaber.* Neither Duhring not Liveing ever saw a case.

X. Acne does not occur in childhood. Mild cases of this disease are not the easiest to cure.

XI Chloasma (liver spots) never occurs before puberty. The disease is not caused by diseases of the liver.

XII. Bromidrosis does not necessarily mean bad smelling sweat. The odor may be that of violets or pineapples.

XIII. Scabies and tinea versicolor do not appear upon the face of adults.

XIV. Eczema margintum is not an eczema, but is a parasitic disease.

XV. Leprosy, as we now understand the disease, is not described in the Bible. Leprosy is not as dangerous to the community as tuberculosis, according to Beaven Rake, Superintendent of the Trinidad Leper Asylum. It is not proved that the disease has been conveyed by vaccination.

XVI. You cannot cure an eczema (tetter) by internal treatment alone. Hyde says, once fully persuaded of this important truth, the physician should be capable of managing the complaint without mental bias.

XVII. Do not apply water to an eczematous surface, as a rule. It is poisonous to acute eruptions.

XVIII. Do not expect the same effect in different persons from the same prescription; that which is of benefit in one case may aggravate an eruption in another.

XIX. Do not use a sponge in making applications to the skin. It cannot be kept clean and pure.

XX. Depilatory remedies cannot permanently remove the hairs without scarring the skin.

XXI. Pruritus does not simply mean itching as a symptom; it may refer to an idiopathic disease that is known by that name.

XXII. Bad blood is not the chief cause of cutaneous diseases; according to most authorities, it can hardly be classed as an etiological factor.

XXIII Scales and crusts are not synonymous terms.

XXIV. Drug eruptions are not due to "salivation of the system" with the drug. A few grains of iodide potash may cause an eruption as well as a hundred.

Idiosyncrasy has been defined as an individual peculiarity which renders one susceptible to certain effects not produced in others. In this way, every one is susceptible to certain ill effects from certain foods; therefore those things which your stomach has taught you it will not digest should be avoided. Shell fish, strawberries, oatmeal, etc., have been known to produce urticaria. Confectionery may aggravate acne or eczema. It is well to remember to keep the teeth in good condition; to have regular hours in partaking of food; not to eat to excess; never to dine alone; to eat slowly and chew thoroughly. Though it is impossible to lay down any fixed precepts of diet, there are certain articles that should be avoided by those suffering with cutaneous diseases.

PERMITTED.	TO BE AVOIDED.
Water plentifully between meals; cups of very hot water before breakfast; small amount bottled table water at meals; one cup of coffee or tea, well diluted, for breakfast; milk *ad libitum* if it agrees. Fresh fish and raw oysters; beef, lamb, mutton, chicken, turkey, fresh game, boiled eggs. Cooked vegetables and fruit in season; cold bread, toast and crackers, crushed wheat, hominy and rice. Tobacco in moderation to those accustomed to its use.	Stimulants, especially fermented; liquors; all beer, wine, cider, etc.; all fried articles; salted meats, pork, veal, lobster, cooked oysters, crabs, eggs, except boiled; sausage, potted meats, rich gravies and soups, uncooked vegetables, cabbage, corn and turnips, pastry, confectionery, preserves, nuts, cheese, rich salads, pickles, desserts, hot bread and cakes, melted butter and buckwheat cakes.

—*Scientific American*

THE MORPHINE HABIT.

BY ALBERT N. DOERSCHUK, PH. G.

Among the many remedial agents known to man, the one most alluring and inevitably disappointing, at once a great good, and the greatest bane to its habitue, is morphine.

The manner in which it entices its victims into that peculiar disease, partly physical, partly mental, which is caused by continuous and progressive morphine intoxication, and termed the morphine habit, is so insidious as to merit the epithet diabolical. Once established in full sway, a more infernal agency, ministering to man's destruction, can scarcely be conceived. The great temptation consequently presented to the tired and care-worn subject is the fact that when the drug is absorbed by the system in certain quantities it soothes all aches and pains, smooths the furrowed brow, banishes all vexation, and produces an exuberance of the vital and intellectual powers which is as delightful as it is rare among overworked professional and laboring men.

A deficient circulation of the blood, caused by excessive labor or other factor, gives rise to morbid cravings of the nerve centres—cravings which are too readily gratified by recourse to the drug shops, and by an appeal to one of the stimulant narcotics, chief among which is morphine. Excessive work or nerve strain has been the starting point in the habit with many a talented professional or business man. A remedy with which elasticity of the faculties can be recalled at will, is very seductive to the struggling aspirant for social or intellectual honors.

Agreeable as is the first reinforcement of failing energy and mental capacity by the use of morphine, so bitter at the end of a few short months are the consequences! From the first dose to the final enslavement of the victim is but one short step. This noxious habit once acquired, the subject loses all will power, and for the rest of his life becomes distinguished by his stooping posture, shuffling gait, dull and bleared eyes surrounded by a livid circle,—by withered flesh, bones that are racked by pain, and an appearance of premature decrepitude,—in brief, a physical and mental wreck devoid of free moral agency, and helpless in the clutch of a once imagined solace.

The habitual use of morphine for a number of years causes all the secretions of the body to be saturated with the poison. The victim no longer digests his food with pepsins of the normal stomach, but the latter must first be goaded into activity by its accustomed spur. The blood bears the drug along in its circulation, and all the vital organs are charged with it. The fingers tingle and the limbs are numb from the effects, and from head to foot the body is saturated with the poisonous alkaloid.

No dependence whatever can be placed upon the words and deeds of the morphine *habitue*, for they both become irrational and chaotic. The temperament grows sullen and disagreeable. The reason is almost unbalanced, and the slightest provocation induces crime. The sufferer becomes incapable of useful labor—a burden to himself and friends, and a pitiable object to his enemies. There is but one hope left to him—emancipation from the habit, or death as the end of his misery.

From current statistics we may estimate that nearly a million people in the United States are almost incurably addicted to the use of morphine and opiates as the very condition of further existence.

At first glance the only remedy seems to be a long stride towards the monarchical plan of limiting the freedom of choice exercised by the purchaser; but when we observe the terrible slavery which this king of poisons has established among us, enthralling many of the most prosperous people, often setting its fangs upon poor and ignorant mortals, and causing misery and anguish wherever it stalks about unchained,—when we take these facts into consideration, our sympathies go out to all our fellowmen who are so securely held in this monster's grip, and with common impulse we exclaim: "Let us cheerfully bear the burden which such laws would lay upon the free, to save innocent people from a fate like this!"

Stand with me, if you will, for half an hour, by some apothecary's window after the common laboring day is over, and see the pitiable procession of "fiends" file in and out, goaded by this arch-demon; mere boys, young men, middle-aged and white-haired; staid school teachers and lovely young women; the liveried footman acting for his lady, the beggar on the streets, and the old hag—what strangely varied classes pay tribute here! Nearly every condition of people one can possibly find in the human family is represented among those who use this poisonous drug as a necessity. They all tell practically the same story; their tale is either that of deception by some ignorant doctor, or of a period of great pain when they resorted to morphine as a temporary relief and were innocently beguiled into this habit. The general conclusion is that the individuals personally were to blame in not having exercised more care and discretion in the selection of the physician, or in heedlessly swallowing all manner of medicine.

The reason this drug obtains such a powerful hold on the victim, is that when it is absorbed by the system continuously for a time, it deadens and replaces certain vital nourishing functions and principles on which the human organism is dependent. Naturally, when the supply of this artificial agent is diminished or cut off, the system is forced to indulge in a sort of fast, which, if prolonged for a sufficient time, often causes death, unless the constitution of the subject be exceedingly hardy. If a person habituates himself for a certain period of time to the use of this narcotic until the system demands no increase in the dose from day to day to produce the same effect, then the poison veritably becomes flesh of his flesh and bone of his bone, or, in other words, it becomes almost as important a factor in the prolonging of his life as is the proper fulfillment of the functions performed by the heart and nervous system. The person who quits morphine for a time after a long-established habit, suffers intensely from insomnia, nausea, vomiting, achings all over, and debility, to such a degree that his continued living becomes a marvel.

Numerous, and as varied in properties, have been the remedies advertised for the relief and cure of this habit. However, they who have given them a fair trial and have been pronounced cured by the "inventors," generally suffer a relapse sooner or later, notwithstanding all precautions, and despite every effort on the part of relatives and friends to prevent a return of the patient to the habit. Experience has simply repeated the time-honored adage that "an ounce of prevention is worth a pound, yea a hundred pounds, of cure." They who are yet but on the threshold of the great evil should be fully warned before they push further into this realm of physical and moral darkness.

The German nation has probably as efficient a law as can be found for preventing its people from acquiring this habit. There the pharmacists are prohibited from dispensing morphine in doses over one-twentieth of a grain, save on a written prescription from a reputable physician—and this latter term is hedged about with a great many definitions and restrictions. After having a prescription for the poison filled once, a person cannot have it refilled, except on a written order from the prescribing physician. In this way the consumers, when they have an ache or a pain, are prevented from prescribing for themselves and from obtaining at the drug shops poisons which are often far more virulent than the populace imagines; and in the Fatherland the deplorable practice of swallowing everything everybody advised is an unheard-of vice.

The appalling foothold which the morphine habit has obtained among our countrymen of late years appeals to the masses, and they in turn ought to insist upon desirable legislation which will effectually prevent the further spreading of this formidable evil.—*Bulletin of Pharmacy, Kansas City, Mo.*

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The trouble with the financial clouds just now is that they have too much silver lining.

LATE ENGLISH PATENTS

RELATING TO FOODS AND WATER.

Improvements in Fluid Meats and the Process of Manufacturing Same. W. Clark, Montreal. Eng. Pat. 4486, March 1, 1893.

Lean beef is cut up into small pieces and cooked in a digester kettle. When finished, the liquor is separated from the beef by straining. The beef is minced and reduced to a homogeneous mass by passing through a series of perforated plates, and then mixed with the liquor, formerly separated, after the latter has been skimmed to remove all fat. To this mixture is added 10–15 per cent of "essence of wheat" (Eng. Pat. 4487, 1893; see succeeding abstract), and the whole thoroughly amalgamated. This mixture is again mixed with an equal quantity of a gelatinous extract of beef, obtained by boiling the sinew and muscle in a digester kettle under pressure. It is claimed that the advantages of this combination of ingredients are that the nutritious constituents, which are necessarily insoluble, remain in suspension for a considerable time, while at the same time a rich natural beef flavor is secured and ready digestibility attained.

Improvements in Food Preparations and in Their Manufacture. W. Clark, Montreal. Eng. Pat. 4487, March 1, 1893.

Wheat germs are soaked in water for two hours, and the solution, which contains the soluble albuminoids, drawn off. This is mixed with extract of meat (Eng. Pat. 4486, 1893; see preceding abstract); or it is coagulated under pressure and the resulting clot subjected to pressure in a press, and in this dry state incorporated with solid meat extract.

Improvements in the Treatments and Packing of Meats or Like Articles of Food for Rendering Them Fit for Use for Army Rations or Analogous Uses. P. Pfleiderer, London. From C. J. H. Warden, Bengal, and W. A. Billings, Meerut. Eng. Pat. 6665, March 29, 1893.

Meat from which all fat, skin, and bone have been removed, is minced and pressed to express as much as possible of the juices. The cakes thus produced are dried in a current of warm, dry air, at a temperature rising from 120 deg.—212 deg. F. The expressed juices are concentrated in a vacuum-pan to the consistency of treacle, incorporated with the coagulated albumen, and then intimately mixed with the dried meat fibre and formed into cakes, which are desiccated at a temperature of 160 deg.—170 deg. F. These cakes are coated with a layer of fat by plunging into a bath of melted meat-fat or butter, and are packed by enclosing each cake in paper impregnated with fat, and the whole in lead or tin foil, which can be soldered at the seams. The whole is enclosed in strong parchment paper, cemented at the joints by a solution of gelatin and potassium bichromate, which is afterward exposed to the light to render it insoluble.

Improvements in Filters for the Removal of Bacteria and Germs from Water and Sewage. F. P. Candy, Balham, Surrey. Eng. Pat. 1448, December 9, 1893.

The object of the process is to provide a permanent filter bed for the retention of bacteria and germs, independent of deposition from the impure water, the accumulation of which is necessarily uncertain. Oxides, or better hydoxides, of iron, manganese, or aluminum, carbonised or calcined iron carbonate, or other suitable materials, are finely powdered and passed through a sieve having about 60 meshes to the lineal inch, and mixed with about the same bulk of wet sand. A layer of half an inch or more of the mixture is placed on the body of the filter bed.

It is preferable to remove any suspended matter from the water or sewage before running on to the above filter. Besides bacteriological purity, increased chemical purity is nearly always obtained.

Improvements in the Method of and Apparatus for Purifying Water. A. T. Walker, Reading, Berks. Eng. Pat. 2807, December 9, 1893.

The water first passes through a series of upright sieves, which may be readily removed and replaced. It then passes through pipes into a tank, from which it overflows into a second tank containing clear furnace or other coke, resting on perforated bricks, under which the water passes into a third tank, from which it overflows into a fourth chamber containing granulated "polarite." After the water has passed downwards through the "polarite," it enters a fifth chamber, whence it overflows into the sixth compartment, which is also filled with "polarite." The water is finally collected in reservoirs for distribution. The polarite beds are not less than 2·5 ft. deep, but of comparatively small superficial area.

Improvements in Apparatus for Filtering and Purifying Water. W. Webster, Blackheath, Kent. Eng. Pat. 1676, December 9, 1893.

The apparatus consists of a vessel containing black oxide of iron, connected from below by means of a long, narrow tube with a small chamber having a perforated bottom and charged with spongy platinum. The long connecting tube has a lateral branch terminating in a short tube parallel to the long tube. The upper end of the short tube is drawn out so as to leave a small opening, whilst the lower end is connected with an inverted bell-jar, which dips into a small water tank provided with a suitable electrolysing apparatus.

The water first filters through the iron oxide, passes down the long tube, where, at the point of junction with the lateral tube, it carries down bubbles of air, air and oxygen, or oxygen alone, as may be required. On coming into contact with the spongy platinum it is sufficiently charged with oxygen to effect the oxidation of any organic matter which may be present.

An Improved Apparatus for Obtaining Distilled and Sterilised Water. J. Nagel, Chemnitz, Germany. Eng. Pat. 20,296, December 9, 1893.

The apparatus consists of a boiler with heating tubes on Field's system, an upcast tube through which the steam passes into an upper chamber. This chamber is provided with a sieve, through which the partly-condensed steam passes downwards through a set of tubes surrounding the upcast tube and enclosed in a cylinder kept cold by running water. At the lower end of the tubes there is a reservoir for collecting the distilled water. The water used for cooling may be used for distillation.

When water is to be merely boiled, the upcast tube is closed with a valve. The pressure of the steam forces the water through a smaller tube into the upper chamber, from which it flows downwards through the sieve and the cooling pipes into the collector.

THE DANGERS OF SALICYLIC ACID.

The *Schweizerische Wochenscrift fur Pharmacie* has the following concerning the dangers attending the external use of salicylic acid:

One of our friends, a country practitioner, was suffering recently from sciatica, and conceived the idea of experimenting upon himself with an alcoholic solution of salicylic acid, which he had seen recommended as a topical application in rheumatism. He applied compressed web with the solution and renewed them several times during the evening. As he started to get to bed he was seized with a feeling of malaise, which was accompanied by intense itching over the body, ringing in the ears, and finally the body began to swell. He lost consciousness, and his servants and others around him thought him dead. A colleague, called in great haste, found the body enormously inflated (the skin seemed as though it had blown full of air), and the patient was in a state of complete coma. He had absorbed by the skin an enormous dose of salicylic acid. After the use of various revulsives and active evacuants, consciousness returned to the patient, and the swelling gradually disappeared. It was several days, however, before he was able to resume his daily avocations.

Pomades containing salicylic acid are also not free from serious inconveniences, not to say dangers, as we have had occasion to find out in several instances. In a number of cases the first application of salicylated pomade produced such discomfort, swelling and inflammation that the patients could not be induced to continue the use of the medicament. The lesson to be learned from these cases by pharmacists is never to dispense salicylated ointments, solutions, etc., without the prescription of a physician.

RESTORATION OF THOSE OVERCOME BY INHALING ILLUMINATING GAS.

A correspondent of the *American Gas Light Journal* says: I have seen hundreds of men overcome by the inhalation of gas, and I wish to say that to keep a man so overcome on his back would be the worst possible course to pursue; and I should expect to see a man so placed succumb rather than revive under that treatment. The absence of air in the lungs must of necessity cause the limbs to become damp and cold. If the following instructions be faithfully followed—I do not care how bad the case may be—I will guarantee that 99 per cent will be restored inside half an hour. As soon as it is observed that a man is overcome with gas he should be placed on his feet, and large quantities of milk be given him to drink. He may show a disinclination to swallow; if so, the milk must be forced down his throat. A man should be placed on each side of the sufferer, and he should then be walked up and down. He will want to sit down, but on no consideration should this be allowed. When the patient vomits, more milk must be administered, and when the patient is out of immediate danger, which will be the case inside of half an hour, he should be placed in bed, when a little warm brandy and water may be given. The above is a panacea, and I confidently submit the recipe to any one that is engaged on main or service laying.

FOR OVER-INDULGENCE

Use Horsford's Acid Phosphate.

Think of your head in the morning after a night's hard labor, and take Horsford's Acid Phosphate for speedy relief.

Dr. O. G. Cilley, Boston, Mass., says: "I have used it very extensively, and with the most remarkable success in dyspepsia, and in all cases where there is derangement of the liver and kidneys."

Goodman (to his financêe's little brother)—"Wouldn't you like to subscribe for a good boy's paper?" Bobby—"Dunno. Maybe I would. But say, ain't there any papers for bad boys?"

INVENTIONS, SCIENCE, ETC.

BRIDGE OF PURE AGATE.

A mining expert sent to investigate some Arizona properties for Denver capitalists recently returned and reports the finding of a most remarkable natural bridge, formed by a tree of agatized wood, spanning a canon forty-five feet in width.

At some remote time the tree had fallen and become imbedded in the silt of some great inland sea or overflow. In time the silt became sandstone, and the wood gradually passed through the stages of mineralizing until it is now a wonderful log of solid agate. In after years water washed away the sandstone until a canon forty-five feet in width has been formed, the flinty like substance of the agatized wood having resisted the erosion of the waterflow. Fully fifty feet of the tree rests on one side and can be traced, but how far its outer end lies buried in the sandstone cannot be determined.

The trunk visible above the canon varies in size from four feet to three feet in diameter. Where the bark has been torn away the characteristic color of jasper and agate are seen. To the naked eye the metamporphosed wood is beautiful. Under a microscope or magnifying glass the brilliant colorings are more clearly brought out in all their wondrous beauty.

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DIFFERENCE BETWEEN ROSENDALE AND PORTLAND CEMENT.

It is not commonly known that the difference between the two well known varieties of cement, the Rosendale and the Portland, lies in the fact that the first named is a natural product and the latter an artificial. The former is made by burning a shaly limestone in kilns and grinding the clinker produced with burr stones to a very fine powder, which, when mixed with water, soon sets and forms an artificial stone nearly as hard as the original rock. Portland cement, on the other hand, is made by combining chalk, or some other form of limestone free from magnesia, with silicious clay, these materials being intimately mixed and made into bricks, which are burned in kilns with coke fuel at a very intense heat; the resulting clinker is ground in the same manner as natural cement, and is much stronger and sets more quickly than the other.—*Stone.*

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COTTONSEED OIL.

It is about forty years since cottonseed oil first appeared upon the commercial markets. In 1892 there were crushed some 1,250,000 tons of cottonseed, from which were obtained about 1,000,000 barrels of oil. It is interesting, says the *Commercial Bulletin*, to note the channels of consumption for this large and increasing industry. It is estimated that one-half of it is used for making lard. At Chicago, 300,000 barrels were used, and at St. Louis, Kansas City and Omaha about 200,000. There are 200,000 to 300,000 barrels exported to Rotterdam for use in butter, 50,000 to 100,000 barrels are used by soap makers for toilet soaps, and 20,000 barrels go to the coast of Maine to pack sardines in. Considerable quantities are also exported to Marseilles, Trieste, and many points on the Mediterranean coast for mixing with olive oil. There is a strong prejudice against cottonseed oil for food purposes in this country, but it is possible that in time this may be overcome. Already in certain sections it is growing in favor, noticeably in Texas and the New England States, where the oil in its pure state is used for cooking, and is recommended by physicians as a remedy for indigestion. There is no doubt but that there is a general growing demand for the oil for table use and culinary purposes. Its introduction for these uses is only of recent date. It has undoubtedly come to stay, and the time may not be far distant when it will equal, if not excel, its competitors in popularity. It is already extensively used in paints, possessing in a degree the properties of linseed oil. It is a chemical possibility to obtain from cottonseed oil linseed oil, but as yet no practical method has been devised. To the paint and varnish manufacturers this is a very important possibility, and one to the solution of which they are looking forward. As an adulterant in olive oil, for which very large quantities are used, it is difficult to detect, owing to a special refining process it undergoes which conceals its presence.

LITERARY NOTICES.

The *Quarterly Illustrator* for April, May, and June, is crammed with good things, pictures and text, original work, too, offered by some of the brightest writers of the day. There are brief, clever papers by Nym Crinkle, George Parsons Lathrop, Henry Pene du Bois, Alexander Black, Clarence Cook, John Gilmer Speed, Elizabeth W. Champney, George Wharton Edwards, W. J. Baer, Cromwell Childe, Henry Russell Wray, Henry Eckford, Charles M. Skinner, Charlotte Adams. Painters whose pictures are reproduced and life work lightly touched upon include William M. Chase, George H. McCord, J. G. Brown, W. Verplanck Birney, Stanley Middleton, E. M. Bicknell, George H. Boughton, Frank DeHaven, Harry Fenn, Aymar Pezant, and Alfred Paris. A rapid review of art events is contributed by Charles de Kay. One hundred and fifty-five artists have pictures in the text including the series of portraits of artists, and the photographic appendix with contrasted photographs of fair actresses and pictures they have copied in attitude and dress. The *Quarterly* has kept its promise to improve with every number.

NEUROSINE THE MOST POWERFUL NEUROTIC ATTAINABLE.

ANODYNE AND HYPNOTIC.

A reliable and trustworthy remedy for the relief of Hysteria, Epilepsy, Neurasthenia, Mania, Chorea, Uterine Congestion, Migraine, Neuralgia, All Convulsive and Reflex Neuroses. The remedy par excellence in Delirium and Restlessness of Fevers.

FORMULA: Each fluid-drachm represents 5 grains each, C. P. Bromides of Potassium, Sodium and Ammonium, 1-8 grain Bromide Zinc, 1-64 grain each of Extract Belladonna and Cannabis Indica, 4 grains Ext. Lupuli and 5 minims fluid Ext. Cascara Sagrada, with Aromatic Elixirs.

RICHMOND, VA., Sept. 29, 1891.

I prescribe NEUROSINE in the class of cases for which it is indicated, daily, and with satisfactory results. It completely relieves restlessness in Fevers.

Landon B. Edwards

Ed. Virginia Medical Monthly.

MEMHPHIS, TENN, Feb. 6, 1892.

I obtained happy results from the use of NEUROSINE. It is certainly the best neuralgic medicine I have used. I have tried it in some cases of Trifacial Neuralgia, after having tried some of our most powerful remedies. None acted as well as NEUROSINE.

Editor Memphis Medical Monthly.

MEMPHIS, TENN., Jan. 7, 1891

I have obtained entire satisfaction from the use of NEUROSINE in cases of Neuralgia.

Dean Memphis Hospital Medical College.

CHATTANOOGA, TENN., Sept. 6, 1891.

Having used NEUROSINE in a number of cases I must say the preparation has given better results and more universal satisfaction than any other combination ever used by me. Have tried it in many nervous affections, in some it is a specific, in others a therapeutic agent of very great value.

W L Gahagan

Coroner of Hamilton County.

McKENZIE, TENN., Feb. 12, 1891.

NEUROSINE had such a happy effect in a case of Neuralgia or Congestive Headache, in which I tried it, often having failed on other things of similar nature. The case was one of long standing Sick Headache of peculiar character. The lady, three days after confinement, without any fever, took severe headache. NEUROSINE relieved her immediately.

R D Gwin

FOURCHE ARCUAULT, MO., March 29, 1892.

I sent about two tablespoonfuls of NEUROSENE to an old lady, aged 84 years; she had been complaining for some weeks with Headache and Neuralgic pains all over her body more or less. She took that small amount and has been quite free from pain ever since, went to church in a farm wagon, 1½ miles, rough road, and is still free from pain and sleeps and eats better. I am well pleased with it.

U. H. JOHNSON, M. D.

DOSE: From one teaspoonful to a tablespoonful, in water, three or more times daily, as may be directed by the physician.

Supplied in Eight-Ounce Bottles.

To any Physician, unacquainted with the medicinal effect of Dioviburnia and Neurosine, we will mail pamphlets containing full information, suggestions, commendations of some of the most prominent professors in medicine and various methods of treatment. Or to those desiring to try Dioviburnia and Neurosine, and will pay express charges, we will send on application a trial bottle of each.

DIOS CHEMICAL COMPANY, ST. LOUIS, MO.

OURSELVES, NOT NATURE, TO BLAME.

The "treacherous delights of spring" are now near at hand, when undertakers get in more stock and make ready for brisk business; more hands are taken on in the cemeteries; and better returns from the "obituary" advertising columns are looked for in newspaper offices. But is there any good reason why this should be an especially unhealthful season of the year? This time in which Nature is thrilling with new life, and strength and beauty. Little, if any, it may be affirmed, beyond what man makes for himself. Some persons invite dangerous maladies by imprudent changes of raiment; others make themselves sick by exposure to airs yet raw, humid and chilling, notwithstanding the brightness of the sunshine; and even the most prudent cannot always escape the ill consequences of local disturbances of the soil's surface. Through the pernicious energy of street improvers, cellar diggers, and the like. Now, too, the ill results of improper living during the winter make themselves felt, when the ferment of re-awakening Nature reaches man and stirs to activity the half-dormant germs of disease he has been accumulating. But, if one has lived properly, and is even moderately careful, there is no adequate reason for "that fired feeling," which is the precursor of sickness, being felt now any more than in any other season.

However, "it is a condition and not a theory which confronts us." Lots of us have the "tired feeling" and, no matter how it came, want to get rid of it before it develops into something worse. Well; that is not difficult to do, if we know how and go rightly to work. Let us see what our symptoms themselves tell us. If we are depressed, languid, enervated, it is because our nervous systems lack tone; if our muscles are weak and have a sense of soreness, the waste of tissue involved in living has not been made good; if our skins are disfigured with pustules and afflicted by boils, impure effete and foreign matter is surely in the blood; if our appetite fails and our digestive functions are badly performed, the liver is certainly out of order and the kidneys, striving to do its work, have become involved in the spreading trouble. Evidently, the blood, nourisher, vitalizer, and rebuilder of all our corporal being, has through derangement of the assimilative and excretory organs been perverted in character and made deleterious. Clogged and impoverished it is no longer a strong current of life, but a slow-moving turbid stream, laden with the seeds of death. And its reflex action upon the organs by which it is made is to constantly more and more incapacitate them for their respective services and increase the vitiation of their product. To this pernicious circle of action no end is possible short of serious illness and very probably death, if its progress is not summarily arrested. To effect this we must stimulate and strengthen the assimilative, digestive and excretory organs, and, in so doing, through them we purify the blood, casting out its impurities and rendering it once more fit to nourish the system. The medicines which do this are called "alteratives," and the most potent of them known to science are the vegetable extracts of Honduras sarsaparilla, yellow dock and stillingia. These skillfully compounded with iodide of potassium so as to retain the extremely volatile but most valuable principles of the vegetable ingredients, never fail of the desired effect. The only prepation in which they are so obtainable is Ayer's Compound Extract of Sarsaparilla.

Portrait of a Lady
who has cleaned house all day without Pearline—and she's had a lively time of it. There's another day just like it coming to-morrow—and more afterwards.

Now, see the difference. With Pearline, all this hard work would be easy; through in half the time; nobody disturbed by it. Pearline cleans, without the least harm, everything that water doesn't hurt. You won't have your paint streaked and rubbed off or your marble discolored or your temper ruffled or—well, Pearline banishes more of the ills attending house-cleaning than anything else known—just as good for washing clothes.

Send it Back Peddlers and some unscrupulous grocers will tell you "this is as good as" or "the same as Pearline." IT'S FALSE—Pearline is never peddled, and if your grocer sends you something in place of Pearline, be honest—*send it back.* 409 JAMES PYLE, New York.

Indigestion

Horsford's Acid Phosphate

Is the most effective and agreeable remedy in existence for preventing indigestion, and relieving those diseases arising from a disordered stomach.

Dr. W. W. Gardner, Springfield, Mass., says: "I value it as an excellent preventative of indigestion, and a pleasant ascidulated drink when properly diluted with water and sweetened."

Descriptive Pamphlet free.

Rumford Chemical Works, Providence, R. I.

Beware of Substitutes and Imitations.

For Sale by all Druggists.

DIABETIC FLOUR.

In the course of a most elaborate and exhaustive essay on ' Diabetes Mellitus," read before the Northwestern Medical and Surgical Society, New York, and published in the February, 1893, issue of the *New York Polyclinic,* a magazine which is recognized as an exponent of leading medical thought in America, Dr. Page says:

"Instead of ordinary wheaten bread, the Watertown Diabetic Flour may be used. The 'Special Diabetic Food,' a brownish flour, prepared by Farwell & Rhines, Watertown, N. Y., makes an excellent bread that contains a very small percentage of starch.

"Saccharin may be used instead of sugar, if tea and coffee must be sweetened. Regarding vegetables in general, it may be said that all green vegetables growing above ground may be used, while all roots and the like that grow under the ground are to be avoided on account of the starch or sugar they contain."

Miss Fuzzle—"I want to break my engagement with Mr. Sappie, but I don't know how to do it without driving the poor fellow to suicide." Little brother—"Why don't you let him see you in curl-papers?"

$100 REWARD $100.

The readers of this paper will be pleased to learn that there is at least one dreaded disease that science has been able to cure in all its stages and that is catarrh. Hall's Catarrh Cure is the only positive cure now known to the medical fraternity. Catarrh being a constitutional disease, requires a constitutional treatment. Hall's Catarrh Cure is taken internally acting directly upon the blood and mucous surfaces of the system, thereby destroying the foundation of the disease, and giving the patient strength by building up the constitution and assisting nature in doing its work. The proprietors have so much faith in its curative powers, that they offer One Hundred Dollars for any case that it fails to cure. Send for list of Testimonials.

Address F. J. CHENEY & CO., Toledo, O.

Sold by druggists, 75c.

THE SENSE OF HEARING.

IN DELICATE PERCEPTION THE EAR IS MORE WONDERFUL THAN THE EYE.

The ear is a wonderfully comprehensive instrument. As compared with the eye, it is vastly superior in extent of the sensations it is capable of experiencing. The eye possesses barely an octave and a half of sensations, whereas the average ear, as we know, has a range of six or seven, while more acute ears have a compass of eleven octaves. And then the ear is a wonderfully accurate instrument and capable of appreciating minute differences that would be wholly impossible in the case of the eye. According to Dr. W. H. Stone, "an architect or draftsman who, between two lines neither parallel nor in one plane, made an error of estimation by eye not exceeding one-thirtieth would gain credit for unusual precision. But in the ear one-thirtieth amounts to a quarter of a tone, and by ear one-forty-fifth is easily determiued." A skillful pianoforte tuner can do much more. He is called upon, for instance, to distinguish between a true and an equally tempered fifth, where the difference is only the hundredth of a tone. He should accordingly be able to recognize at least 600 different sounds in an octave. More than this, according to the investigations of Professor Mayer, it is possible, under specially favorable conditions and for sounds whose pitch is near that of C3, to distinguish from each other notes which do not differ by more than a one-hundred-and-twentieth of a seminote.

In the rapidity of its appreciation the ear is remarkable. In a fraction of a second it can accurately refer any note to its place in the scale and can just as easily and quickly separate from each other several widely different notes. According to recent investigations, the ear is capable of hearing a sound when only two vibrations are made. It should therefore hear the middle notes of the pianoforte in the two or three-hundredth part of a second. It requires more time, however, for the ear to distinguish the full characteristic of a note. To do this, according to the experiments of Exner, Auerbach and Kohlrausch, from two to twenty vibrations are necessary.

With proper training and practice the organ of hearing can be rendered remarkably sensitive and accurate. There is rarely any physical defect in the ear itself. The defects ordinarily noticed and spoken of are such as can be easily remedied by cultivation. The organ truly may never be able to retain the remarkable range of audition we have spoken of above; it may never become so "apprehensive and discriminant" as the ear of Mozart, but its delicacy can be increased and its general appreciation of musical sounds wonderfully improved. This is especially true if the work of instruction is begun in childhood, when the organ of hearing is naturally most sensitive and most readily susceptible of cultivation. In making experiments with rods and tuning forks giving very accurate sounds, I have frequently been struck with the very great difference in the ability to perceive such sounds, as manifested by young and old persons. Even when the latter were trained musicians, they were incapable of hearing some sounds that were quite audible to children who had no musical training whatever. This fact, like many others that might be adduced, is a striking commentary on the necessity of beginning early the training of the young, when eye and ear, not to speak of the other senses are ever on the alert and quick to detect sounds and forms and colors, which at a later period would entirely escape their observation.—*Paris Etude.*

PUT YOUR HEAD TO THE ENGINE.

"How will you have your feet?" the porter asked in a Wagner car coming from Buffalo.

"Feet to the engine," said the passenger.

"If you travel much you'll have your head put next to the engine," said the colored man.

"No," said the passenger, "I am afraid there might be a collision, and then I'd be thrown with all my weight against my head." The porter chuckled.

"I beg pardon, boss," said he, "but I notice dat all de railroad men has their heads put towards de engine—and all the commercial travelers also. The biggest arguments is in favor of doing that way. In the first place, there ain't many head-on collisions. There's more danger of a rear-end collision. The reason is that every passenger train has its own right of way, and runs regularly every night, and is looked out for by all the trains that's running ahead of it. Therefore the most danger is from something behind which don't know when we have stopped or broke something, and which runs into us unexpectedly. There ain't anyone looking out for any kind of collisions, 'cause when they come it matters mighty little which end you're putting forward—your head or your feet—but if you insist on looking out for 'em from behind—I'm a telling you."

"Any more arguments?"

"Got plenty more arguments, boss. You don't want to sleep with your feet toward the engine, because if you do the draught through the car blows right agin your head, and when it gets cold at night your head and chest are exposed. Put your head toward the engine and you feel cool without gitting in no draught. It's just the same way in summer. If you sleep with your feet toward the engine you can't have your windows open, with the screen in 'em, without getting the wind and fine dust right in your face, whereas, if you sleep with your head to the engine, you get the cool air and no draught and dust."

"Is that all you know?"

"No, boss; I hain't told you the biggest argument yet why you should have your head made up toward the locomotive. The most serious thing of all is the circulation of blood in your body. You been having your feet made up toward the engine, eh? Well, I reckon you don't never sleep very well in the cars, do you? Your night's res' is usually broken, ain't it? Well, sir, lemme make up your head to the engine an' you'll sleep like you was a baby. Dat's because the motion of the train is so strong and steady that it sends all your blood toward the end that's furthest from the engine. Put your feet to the engine and all the blood rushes straight to your head and gives you a restless night. Put your head to the engine and the blood goes away from your head, leaving it cool and easy so as you can res' like a child."

"Put my head toward the engine and stop talking, will you?"

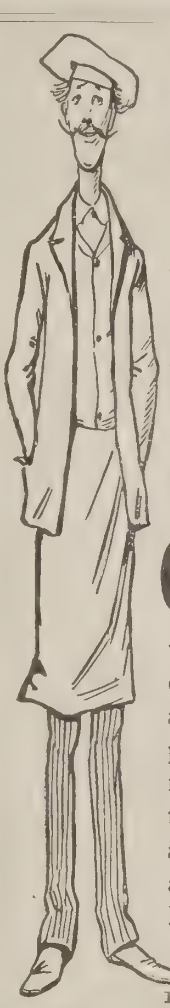
"Yes, sir; all right, sir; anything you say, sir. You won't gredge me dat quarter in the morning, I'm a-tellin' you."

[A lapse of half an hour. Then a voice from between curtains. It addresses the porter.]

"Solomon; Diogenes, porter! Any arguments as to what part of the train is the safest?"

"There aren't no use of arguments 'bout dat, sir. The safest place on the train is the middle of the middle car on the side furthest from the other track."

"Good night, Cicero."



Needs
Shortening

So do all cooks; and the puzzle for every one of them has been how to avoid sodden pastry. The problem has now been solved by the

NEW VEGETABLE
SHORTENING

Cottolene

which makes light, crisp, wholesome and easily digested pastry. The most famous cooks in the country say so, and you will also after a fair trial. Make it now.

Sold in 3 and 5 lb. pails by all grocers.

Be sure you get the genuine.

Made only by
The N. K. Fairbank Company,
CHICAGO,
New York, Boston,
Philadelphia,
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St. Louis, Montreal.

THE AMERICAN COTTON OIL CO

50 YRS. THE ORIGINAL CORN STARCH. 50 YRS

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PUREST
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Highest Awards
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Try "SILVER GLOSS."

T. KINGSFORD & SON. Manufacturers OSWEGO, N.Y. U.S.A.

SOLD ALL AROUND THE WORLD.

BEST QUALITY IS GOOD ECONOMY.

THE STANDARD OF EXCELLENCE FOR OVER FIFTY YEARS.

A WART STORY.

Last month a gentleman called on me to be examined for life insurance. I noticed that the backs of his hands and fingers presented a large array of unsightly warts ("verrucæ vulgaris"), which he said had hitherto resisted all treatment, either returning or refusing to go. He went to the West Indies, and, during the voyage, shot a porpoise, which was hauled on deck, and, in cutting up the carcass, his hands were freely besmeared with the blood. To his surprise, every wart vanished in short order, and none have come back. Returning to Philadelphia to-day, he presented himself to me with a perfectly clean pair of hands. I have often heard that pig's blood will remove warts, and have received the news with a large grain of salt; but here is a singular coincidence, to say the least of it, if only in the resemblance between a porpoise and a pig. I should like to give this "remedy" a trial; but few druggists keep porpoises in stock, and I do not think I could shoot one —*Louis Lewis, M.D.*

A FAMILY LAXATIVE.

Physicians are not inclined to recommend self-medication to the laity. Yet there is one need which they are almost unable to supply. We refer to "the family laxative." The family physician is able to prescribe for the most complicated and obscure of maladies and yet is often puzzled to know just what to give when asked for a remedy which can be kept in the house for family use as a laxative, that shall be effective, free from danger, and not unpleasant to take. When absent on our summer vacation we were asked by four different parties, representing as many families, what we thought of the "Syrup of Figs." Not one word did we volunteer on the subject, and we were somewhat surprised to find that there was this small token of the very general use of that preparation. These parties said they derived more benefit from it and found it more pleasant to take than anything of the kind they had ever used. The simple question with them was, is it a dangerous compound? We informed them that its active ingredient was a preparation of senna and that it was entirely free from danger. With this assurance they volunteered the information that they should continue to keep it in the house.

The therapeutical properties of senna are so well known that comment on this seems unnecessary. It might be well to notice, however, that Bartholow says it is "a very safe and serviceable cathartic," and that it is "highly prized as a remedy for constipation." He also makes the important observation that its use "is not followed by intestinal torpor and constipation."

The simple truth of the matter is, we have altogether too few preparations which we recommend to our families as effective laxatives. But the California Fig Syrup Company has one of the most desirable combinations for this purpose with which we are familiar. The Fig Syrup Company gives to the profession the composition of this preparation, therefore there is no secret about it; the persons who use this laxative speak in the highest terms about it; and we are pleased to notice that a large number of physicians are prescribing it.

Viewed from the narrowest and most selfish stand-point the physician will lose nothing by recommending such a preparation as Syrup of Figs to his patients; while viewed from the highest standpoint of doing the best possible by those who place themselves in our care, we would say the profession cannot do better than give their indorsement to such a preparation.

TO THE MEDICAL PROFESSION.

Elixir Salicylic Acid Comp.

PREPARED ONLY BY WM. R. WARNER & CO., PHILADELPHIA, PA.

This preparation combines in a pleasant and permanent form, in each fluid drachm, the following:

℞			
Acid Salicylic (Schering's) -	grs. v.	Potass. Iodid. -	grs. iss.
Cimicifuga - - - -	grs. i ¾	Tr. Gelsemium -	gtt. i.

SO PREPARED AS TO AFFORD A PERMANENT, POTENT AND RELIABLE REMEDY IN

RHEUMATISM, GOUT, LUMBAGO, Etc.

This preparation is especially valuable for rheumatic diathesis and in the treatment of acute inflammatory, subacute and chronic rheumatism; any of which will yield to tablespoonful doses; every three or four hours, until four doses are taken; then a dessertspoonful at a time and finally decreased to a teaspoonful every three or four hours.

In acute inflammatory rheumatism, experience has proven that two teaspoonfuls administered every four hours, until a slight ringing in the ears follows, the dose then decreased to a tablespoonful every three or four hours, will produce the desired effects.

The advantages of Elixir Salicylic Acid Comp. are afforded by the combination of Salicyclic Acid with Soda in excess, thus forming a salt less corrosive and irritating and more readily borne by the stomach.

The other ingredients possess advantages well known to the Profession to whom this preparation is alone introduced, we therefore suggest the propriety of specifying "Warner & Co.'s" and ordering in 12-oz. quantities, to obtain original bottles.

It is a matter of great satisfaction to us to be able to place before the Profession a remedy so effectual in the cure of one of our most stubborn classes of disease.

Elixir Salicyclic Acid Comp. is put up in 12-oz. square blue bottles, with prescription label on it, and may be obtained from Druggists everywhere. See that no substitutes are offered.

ESTABLISHED 1823.

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DISTILLERS OF

Y. P. M. WHISKIES

DISTILLERY, - Nos. 408, 410, 412 and 414 South St.
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STORE, - - - - - - No. 700 Passyunk Ave.

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New York Office, - - - 78 Wall Street.

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SENATE BILL 1371.

The passage of this iniquitons and wholly unnecessary piece of special legislation is being urged through Congress by the political demagogues, for the purpose of gaining votes among the farmers, and some of the reasons which are given by its advocates are really ridiculous. As usual with the class of men who father such bills some of these are apparently given with a single eye to the health and welfare of the people. Paternalism of the worst kind and the very reason of which many really useful and practical laws have been opposed by these very wily politicians. The chief objection they claim to have against Oleomargarine, is that it is unwholesome. We have shown, for years, that Oleomargarine not only is not unwholesome, but in fact more wholesome than a great deal of the average butter sold in our market. But even admitting that there might be such a thing as unwholesome Olemargarine the States alone have right to legislate in the matter and can forbid its manufacture and sale. This act is not in the province of Congress except in the territories and District of Columbia.

Another reason urged, is that Oleomargarine should be forbidden to prevent possible fraud. No fraud can exist in the sale of Oleomargarine in the original package by the citizen of one State to the citizen of another, as the United States revenue law compels it to be marked, branded and stamped in such a way as to advise even the most ignorant that it is not butter, therefore the first purchaser of Oleomargarine imported from another State cannot possibly be imposed upon. Again, after the Oleomargarine is within the borders of a State and opened, or as the language of the Courts have it "mingled with the property of the State," then the State has complete power over it without any further grant from Congress. Moreover the U. S. Revenue law regulates and controls the sale, providing the laws of the State allow its retail sale. In short the States have ample power to regulate and control the sale of the article after it is within their borders, and there can be no fraud perpetrated upon the buyer when it comes into the State from another State in the original package.

Again, the question of its color is urged against it. It goes without saying that the manufacturer of prepared food has an undoubted right to make his goods as attractive and as pleasing to the eye, and as desirable to the purchaser as he can, providing of course he does nothing to injure the quality of the goods. The use of butter color, the same as is used in nine-tenths of the dairy and creamery butter, and in all of the mixed, assorted ladle and packing stocks, is just as much of a deceit upon the consumer as is the use of butter color in Oleomargarine, therefore the butter men and dairy people have no right to complain. An affidavit in a recent case at Utica from the Wells-Richardson butter color manufacturers, stated that their butter color was almost universally used in all the dairies and butter manufactories of this country and also of foreign countries. It is also a question whether butter color was not generally used first in the making of Oleomargarine. One thing in favor of the Oleomargarine manufacturers claim of the right to use it, is the fact that he has *always* used it, a trace of it having always been a component part of Oleomargarine ever since its manufacture in this country. It is not right therefore, admitting Oleomargarine to be a wholesome and nutritious food, to ask the manufacturer to cease using color which does not injure the article, and thereby change the character and appearance of the product. Especially does this request come with very bad grace from such people as make up the New York Mercantile Exchange, and who are notoriously engaged in the buying, selling and handling of cheap butters, and putting them out upon the market as fine butters after they have been through certain mysterious processes.

The passage of such a Bill as 1376 would be urged on the ground of fraud and possible unwholesomeness, etc., the real motive being the protection of butter dealers, not farmers, for they need no protection. The precedent established by its passage would be exceedingly dangerous to other articles of manufacture, which it might be desired by any State to keep from entering its borders from another State. It is a repetition of the old dressed beef legislation which our readers will remember.

Our claim is that Oleomargarine does not injure the sale of any fine clean butter, but that it does play havoc with ladies and packing stock, and this claim is supported by the fact that the most violent opposition to Oleomargarine starts not with farmers, nor even with creamery men, but with butter dealers (commission and otherwise) and such Dairy Associations as are not over scrupulous as to the quality of the butter that they put upon the market. If the reader will remember ten years ago how frequent it was to meet with rancid nasty butter in every cheap restaurant, hotel and railroad dining station, and reflect upon the situation at present when such an article is rarely found, you will admit that there is something in our claim that Oleomargarine has accomplished a great work in driving the undesirable kinds of butter (which butter makers and dealers made their greatest profits) from the market. The farmer now either has to make good butter, or if incapable of that sell his milk to some creamery that can make good butter.

We claim that the best Oleomargarine is second only to the best butter, and that there is no Oleomargarine manufactured which is not more palatable and wholesome than the ordinary cheap butter.

It might be interesting to investigate a little the methods of handling, packing and mixing; and selling the butters which we see quoted in the daily papors all the way from nine cents to fifteen cents at *wholesale.* We have no doubt that these butters are collected, treated, deodorized and colored, and put out upon the market at much higher prices. The product so obtained is not good, and neither safe nor desirable as human food, but it is this very product which is driven to the wall by Oleomargarine, and hence the bitter enmity of commission and other dealers in cheap butter.

A good deal has been said about the temperature at which Oleomargarine melts as compared with butter, it being a fact we believe that there is a few degrees difference in favor of butter. Such scientists as Mr. Van Valkenberg have tried to prove from this that Oleomargarine would irritate the stomach and not digest. Every one knows that this is humbug to a large extent, and the process of digestion is not accomplished solely by heat, but rather by the action of gastric juices, etc., and it also admittedly proved that the chemical composition of Oleomargarine is essentially the same as that of butter.

But we think enough has been said to show the real animus behind the bill. The American people believe in fair play and though slow to rise up and protest against much of tnis high-handed partiality shown by their servents in Congress, we believe that if our Congress goes too far and touches their pockets and stomachs with this bill, they will rise up and sweep these truckling demogogues out of existence, sending honest statesmen in their places who will not misuse their delegated power to perpetrate their own feeding at the public through at the expense of the masses. Let Senator Hill and his coherts beware.

HOUSEHOLD.

TESTED RECEIPTS.

Every receipt here given is original, has been practically tested by the AMERICAN ANALYST and is therefore confidently recommended.

BAKED EGGS.

Butter a pie plate, break as many eggs as needed into a saucer, one by one. If found good, slip into the dish; the yelks must not be broken, and they should not be crowded in the dish. Put a small piece of butter on each, and sprinkle with salt and pepper. Put in a well-heated oven, and bake until the whites are set.

STEWED CARROTS.

Scrape and boil until nearly done. Cut into small squares, and put into a saucepan, with two small onions minced, a little chopped parsley, pepper and salt to taste, and half a cup of rather thin drawn butter. They will require half an hour's simmering. Serve hot.

STEWED SALSIFY OR OYSTER PLANT.

Scrape the roots, dropping into cold water as soon as cleaned. Cut in pieces an inch long, put into a saucepan with hot water to cover them, stew until tender. Turn off nearly all the water, and add a cupful milk. Stew ten minutes after this begins to boil; put in a large lump of butter, cut into bits and rolled in flour; pepper and salt to taste. Boil up once, and serve.

MINCED SPINACH.

Wash spinach carefully in several waters and boil until tender. Drain, and rub through a colander. Then put in frying pan a good lump of butter, the spinach, and salt and pepper to taste. When hot beat in three spoonfuls of cream. Garnish with sliced hard boiled egg.

PARSNIP BALLS.

Boil in salted water until very tender; mash and season with butter, pepper and salt; add a little flour and two well beaten eggs. Form into small balls, and fry in hot lard.

CARAMEL CUSTARD.

Put two dessert-spoonfuls of crushed sugar into a tin pan; let it stand on the stove till it begins to brown, then stir constantly till it is a thick, black syrup. Pour it into a quart of scalding milk; add six ounces of white sugar and the yolks of six eggs. Beat and pour into cups set in a pan of hot water in the oven and bake twenty minutes.

TAPIOCA CREAM.

One cup tapioca soaked for eight hours in milk enough to cover; then take one quart of milk, put on the stove, and when it boils add the beaten yolks of two eggs and the tapioca; let it boil up, then stir the beaten whites very thoroughly through it. Sweeten, and flavor to taste. Eat cold.

BAKED FARINA PUDDING.

Stir into a quart of milk when boiling one half pound farina, cook it five minutes and set it aside to cool; meanwhile stir four ounces of butter to a cream, grate the rind of a lemon and add the yolks of six eggs, one cup each of sugar, raisins and currants, and mix all together with the farina. Beat the whites of the eggs to a froth, stir it into the butter, and bake slowly for an hour.

STEAMED PUDDING.

One cup of sugar, one half cup of butter, three eggs, one cup of milk, three heaping teaspoonfuls of baking powder, three cups of flour; steam one hour.

FRUIT SAUCE.

Boil any kind of fruit with a little water until soft; rub through a fine sieve; sweeten to taste; make it hot before serving.

ECONOMIC COOKING.

Economic cooking is not always good cooking, but there is nothing truer than the statement that good cooking is the only economic cooking. In the use of the term we do not merely mean standing over the range and regulating the fire—not simply planning what to get for a particular meal, and how to prepare it for the table. We mean the philosophy and chemistry, as well as the practice of cooking. We mean a knowledge of foods and of the combinations of foods that must conduce to good health and comfort, and yet sustain the least waste in food products and fuel. There is no economy nor comfort in the poorest of table supplies, whether meat, bread, vegetables, or beverages. The best, not necessarily the most expensive, is the most economic. Cooking is both a science and an art. The former must be learned from books and the teacher—the latter from practice. Too many have an idea that a woman comes by cooking as naturally and as easily as she does by adorning her person, or by taking care of a baby. There is no greater and more disastrous mistake. No one can cook well—that is, do sanitary, palatable, and economic cooking without training or experience, or both. We hope the day will come when not only every state institution of public learning, but every high school, seminary and college in the country will have an industrial department in which cooking shall be a required part of the curriculum for the girls. It is a delightful thing to have on a table such a variety of food as to invite to repast; but a few things nutritious in quality, prepared so as to please the eye, smell, and taste, and yet not to over-tax the stomach and assimilative organs, are much better than mere variety. A good cook should know, at least approximately, the cost of each meal prepared, should not only plan what to get but be able to go into the market and make the best selections as to quality and quantity; should know the incompatibles, from a nutritive and digestive standpoint, and should put all upon the table in the most attractive form, and at the least possible cost. The amount wasted annually in Iowa by cooking too much, and spoiling or wasting in material and fuel, is something astonishing! Let us figure a moment. There are two millions of people in the State. Deduct 20 per cent for the nursing children. There would be left one million, six hundred thousand who come to the table. As a rule children eat nearly as heartily and are quite as wasteful as adults. We believe that at a low estimate, taking rich and poor all over the State, that 5 cents would be a moderate estimate of the loss for dinner, and 2½ cents for the other meals daily—or 10 cents per capita daily, for 1,600,000 people. That in the year would, all over the State, amount to $5,840,000! Suppose this amount were saved annually and applied to other purposes. Think of the number of select and well equipped culinary schools that might be organized and successfully maintained. Think of the miles of macadamized public roads that could be constructed. Think of the public libraries that could be provided, and the destitute that could be relieved. Think, too, of the number of dyspeptics that would be prevented by the intelligent selection and preparation of food best adapted to the wants of the body. If all our homes were thus equipped with wives, mothers and daughters, so well informed on this essential branch of industry, the help question would be more easily solved and the American home would not be so completely at the mercy of the "domestic." Women, so instructed and practiced, need not necessarily do their own cooking, but the ability to do it, and do it well, and to know how to direct others to do it well, would be a wonderful improvement upon present methods and conditions in most of our homes. Home would then have more attractions—especially about "meal time." There would be less waste, less worry, less indigestion, better health, greater happiness, and fewer divorces!—*Iowa Monthly Bulletin.*

SALMON PUT UP IN CANS.

AN INDUSTRY THAT WILL EVENTUALLY EXTERMINATE A VERY VALUABLE FISH.

When one comes to think of it it seems quite wonderful that one should be able to buy a pound of salmon in a can from the Pacific coast for twenty-five cents. The frozen fish costs forty cents a pound at least, while the unfrozen article ranges in Eastern markets from $1 up. Besides the manner in which each can is made to contain a segment of salmon perfectly fitted into it appears most surprising, the bones, even to the larger vertebræ, melting in the mouth without requiring so much as a crunch between the teeth and the red flesh separating in beautiful, clean flakes.

Yet salmon would be very much cheaper than at present were it not that the great canners of Alaska have formed a combination to restrict the product. This is unfortunate for consumers perhaps, but lucky certainly for the fish, which would be wiped out altogether within five years at the most if the companies engaged in their capture had a market for all they could produce at profitable rates. The methods employed are the most destructive conceivable, inasmuch as the fishermen stretch seines across the mouths of the rivers and take the fish which are going up the stream to spawn. There is a law against this sort of thing but it is not enforced. Eventually, doubtless, the supply of this valuable finny game will run out and artificial propagation will have to be resorted to.

Thus far the United States Fish Commission has not extended its operations with respect to the artificial breeding of salmon into Alaska. Its attempts in this line have been limited to the Columbia and Sacramento rivers. In those streams the supply has been successfully maintained, and when the time arrives there is no doubt that similar methods will be applied with equally favorable results to the preservation of the fish in Alaskan territory,

The only experiments made in this direction up to this present time in Alaska have been conducted by a canning company at Kodiak. This concern is placing 5,000,000 young fry in fluvial waters each year at its own expense, already with markedly satisfactory results. One of the most astonishing discoveries achieved by civilized man is the simple process by which he is able to effectively create myriads of fishes, which otherwise would not have lived, out of a few handfuls of roe.

The salmon caught in the seines and gill nets are brought to the cannery wharf, counted and thrown into heaps. Chinese, their labor being cheaper, are mostly employed for subsequent operations. They take each fish, cut off the head, tail and fins, remove the entrails and throw the rest of the animal into a big tub. Next the fish is washed and placed in a trough, where several knives, acting after the manner of a feed-cutter, slice it into sections exactly as long as the height of a can. These sections are set on end and split into three pieces each—one piece large enough to fill the can, while the others are smaller. The fragments are then placed on tables and the Chinese fit them into cans. Next the covers are put on the cans and soldered.

After being soldered the cans are put into hot water and watched, in order to see if any bubbles rise, indicating leaks. Those which endure this test successfully are placed in an iron tank and boiled in salt water. Salt water is used in preference to fresh, because it can be raised to a higher temperature. After boiling for one hour and a quarter each can is "vented." This means that a hole is punched in its top to permit the expanded air to escape. Then the hole is soldered up and the cooking is finished by further boiling in salt water for an hour and a half. If they were not "vented" this second cooking would burst the cans.

Finally each can is tested by tapping it on the head with a big nail. If leaky, it will usually give back a "tinny" sound. Great care is taken to avoid leaky cans, because any which are not hermetically sealed will inevitably burst. The meat decays, pushing up the top of the can. One so affected is called a "swell-head." If it bursts, it is likely to ruin the whole case. Three salmon will ordinarily fill forty-eight one-pound cans, making one case. The cans are made on the premises out of sheet tin.

Within the last few years the manufacture of oil from salmon heads has been undertaken with profit. The heads are bought from the canneries at the rate of 1,000 for $1. One factory produces as much as 18,000 gallons a year, worth 24 cents a gallon. The heads are cooked by steam and the oil is run off the tops of the vats. One thousand heads make from thirty to thirty-five gallons of oil. It is not disposed of by itself as a commercial article, but is mixed as an adulterant with other and more costly oils. Salmon intended for smoking are first scrubbed and dried, after which they are hung up in the smoke house, where a slow fire is kept burning. One week is required for the smoking process.

Seals and sea lions are a great nuisance to the salmon fishermen. At the mouth of the Columbia river they watch the gill nets and grab the caught salmon by the throats, devouring those parts which they regard especially as tidbits. Bears are very fond of salmon and catch a great many of them in the streams. They eat only the heads. De gustibus—you know the rest. Chinese are forbidden to fish for salmon in the Columbia river on penalty of being shot on sight. Therefore they do not fish.

CURIOUS KINDS OF BREAD.

According to the journal *La Culture*, the following various substances have been and are employed in different countries for making bread: In remote antiquity all kinds of almonds, nuts and grains were made use of for this purpose. In South America an enormous quantity of earth nuts are edvoted to this object; they come from Virginia, North Carolina Georgia, Tennessee; also poppy seeds, chestnuts and rice. In ancient times the inhabitants of Thrace made a kind of flour out of the triangular and thorny root of the water lily. In Syria they dried mulberries and made them into flour, the chief objection to which arose from the fact that it caused the hair to fall off. Persons with a large appetite became bald. The Egyptians make bread out of a mixture of wheat grains and flour. In Sweden, Lapland, Iceland, Tartary, they make bread out of powdered fish, dried and ground. In northern countries they mix tomato flour with powdered meal. The Irish, in times of distress, like the inhabitants of Russia, made bread from a species of moss found in abundance on their coasts. It is said that this bread is nourishing and appetising, but some would not like to try it. The Indians during their frequent famines made an imitation bread of crushed white stones, barks of trees and sawdust. They consider themselves lucky when they can mix millet and its varieties with it—sorgho, dura, rice, roots rich in starch, which give us arrowroot, manioba and tapioca.

ANOTHER DECISION IN FAVOR OF OLEOMARGARINE.

The new law requiring oleomargarine to be colored pink when offered for sale in Minnesota has been declared unconstitutional by one of the district courts of that State.

The judge said oleomargarine is a recognized and legitmate article of commerce; that it is made of clean and wholesome materials, the manufacture being carried on under the supervision of United States inspectors, and that legislatures have no power to compel the altering of the color of a food product by unnecessary ingredients when the article is lawfully manufactured under the authority of the United States.

THE PHILADELPHIA "MEDICAL NEWS" ON MARGARINE.

In an editorial note our contemporary says:—"It is estimated that about fifty million pounds of this food-product are annually manufactured in the United States. In many ways as good a food as butter in some respects, and for certain purposes superior to butter, we waste several hundred thousand dollars in taxes in the attempt to restrict its use in the interest of butter-makers, instead of seeking rightly to utilise it as a proper food."

RESUME OF AN ELABORATE ARTICLE ON WHY THE USE OF OLEOMARGARINE SHOULD BE ENCOURAGED.

There was found no cases in which substance were used which were not cleanly or wholesome; and it may also be added that no case of adulteration, with unwholesome articles, in which the facts were well authenticated, has come to the author's knowledge, although search and inquiry have been constantly made. Stories of such as have been brought to notice have not stood the test of investigation.

The ingredients are those which find common use in many domestic ways, and in themselves, when of good quality, are wholesome, and in no way injurious when taken as food; and, as stated above, no grounds exist to reason that other than such quality is used. From these a mixture is made by a process of manufacture which is simple, and which would in no way make an unhealthly compound. This product so nearly resembles butter in appearance and taste that experienced persons are not able to distinguish them with any degree of certainty.

Oleomargarine will resist rancidity longer than butter will under the same conditions.

The risk of parasites from the use of oleomargarine is one of possibility more than probability, and is one of those many risks which we are at present, of necessity, daily incurring, but from which we seldom suffer any tangible effects.

In nutritive principles, as shown by Prof. Atwater, it compares so favorably with butter as to present a difference almost too slight to be estimated, except by the chemist.

From the evidence we have of the digestion of the different fats, it would appear that there is a slight difference, and this in favor of butter. Such results are not conclusive of the actual digestion as accomplished by nature, but all agree in placing butter before oleomargarine, and also agree that this preference is slight.

Popular opinion in regard to oleomargarine is, in general, prejudiced, and, as has been said, is due in a great measure to mistaken ideas of its composition, and to the fact that, by people in general, it has been known and is still considered as adulterated butter. This term is rather an unfortunate one, and scarcely just, because of the universal revolt against anything with which this word is associated, without inquiry into its significance; and it would seem better to regard this product as a distinct article of food, since it is now legally recognized, and its manufacture is allowed.

ADULTERATION.

BELGIAN REGULATIONS AGAINST BEER ADULTERATION.

Sir F. R Plunkett, Her Majesy's Minister at Brussels, in a dispatch to the Foreign Office, has sent a copy of a royal decree establishing new regulations for preventing the adulteration of beer, and for ensuring, as far as possible, that the beer should reach the consumer in good condition. The following is a translation of these regulations.

Art. 1. It is strictly prohibited to use in the manufacture and preparations of beers products containing matters injurious to health, as also to sell, expose for sale, detain or transport for sale, beers containing these matters, or beers otherwise adulterated.

For the application of the present regulations, such antiseptics as salicylic acid, sulphuric acid, or their saline preparations are considered as injurious to health. The presence of sulphuric acid is, however, permissible in beers when the proportion does not exceed 14 milligrammes per litre, probably originating in a careful disinfection of the cask.

Art. 2. Casks, bottles, or other receptacles, in which beers are contained for the wholesale trade, or in demijohns, must bear in distict characters the name and description, as well as the address of the maker or merchant.

Every factory or trade mark, regularly deposited, will be sufficient for the purposes of the above regulations.

Art. 3. Taps, pipes, pumps, carbonic acid apparatus, etc., used for the serving of the beer must be kept perfectly clean.

The air admitted to the beers in casks for sale must come from a place free from any cause of contamination and well ventilated, if possible, from outside the houses.

Art. 4. It is prohibited to sell, expose for sale, detain or transport for sale *stortbier*, collected in the shops at the bottoms of glasses or on the tables and counters, unless these liquids are denaturalised in such a way that they cannot be utilized as beer, nor serve for mixing with beers, nor be employed in the manufacture of vinegar.

Art. 5. Infractions of the preceding regulations will be met with the penalties provided in the law of the 14th of August, 1890, without prejudice to the application of the penalties provided by the Penal Code.

THE SAUSAGE TRADE IN ENGLAND.

One of the most difficult of trades to deal with as regards efficient inspection, so necessary for safe-guarding the public, is the sausage trade. Some few months ago there was an outbreak of cases of poisoning in several parts of the country from sausages made at Leicester. At North London Police-court the other day some startling revelations were made as to the practices of sausage manufacturers. In the examination of a sausage maker's apprentice it was elicited that sausage rolls were the product of red ochre, pepper and salt, and soaked brown bread. In answer to an enquiry as to where the sausage was, it was stated that there was none required. It surprised Mr. Lane, the Magistrate, to learn that red ochre had anything to do with a sausage roll, and he was informed that it was to give the bread the appearance of beef.

A butcher, named John Banks, was charged on the 22d ult., at Stoke-on-Trent, under the following circumstances: On the 3d of January P. C. Clayton was passing this butcher's premises, when he noticed a bad smell, which induced him to go inside. He found some meat being stewed in a boiler, a quantity of meat in the cellar, and various portions of meat in other parts of the house. To him the whole of the meat appeared to be rotten, and it gave off a most sickening smell. He left officers in charge of the premises while he gave information to the sanitary officials. The same night Dr. Johnson, Medical Officer of Health, with Mr. Greatbach, his deputy, visited the place, and the following day the Sanitary Inspector went to the house, seized the meat, and had it formally condemned, after which it was ordered by a Magistrate to be destroyed. In supporting the statement of the Town Clerk, Dr. Johnson said that the meat weighed about 1cwt. altogether. It consisted of pigs' skin and scraps and offal from a slaughter-house. Portion of it had been prepared for food as brawn and sausage, another portion was in course of preparation, and there was some that had not been dealt with. The whole of the meat was putrid and unfit for human food. It was in such a state as likely to convey disease to persons who partook of it. Mr. Sproston addressed the Court for the accused, but there was really no defence. The Stipendiary said this was absolutely one of the worst crimes that could be committed if one looked at the offence as against the community. By the commission of this crime the health and even the lives of hundreds of individuals might have been sacrificed. There was not the least doubt that this practice had been going on for some time, and that the Potteries had been inundated with diseased food in the shape of sausages and preserved meat. This was not a case which could be dealt with by the imposition of a fine, and therefore the accused would be sent to prison for three months.

This case, and those to which we last week directed attention as to the use of rotten eggs as a stable article by confectioners, show that a great deal more attention should be devoted to food inspection than can possibly be given to it by the existing staff of officials. There is not one per cent of the confectioners who use rotten eggs for pastry discovered or punished. The preservatives, flavorings, and colorings enable any kind of putrid offal to be used for sausages, which, once they are made up, whatever may be the suspicions of the Sanitary Authorities, cannot be interfered with. The present system of food inspection affords no real facilities whatever for putting a stop to the practices of scoundrels who foist diseased or poisonous food upon their fellow citizens. The work of inspection is delegated to already over-worked Sanitary Inspectors, and is a task to which they are only expected to devote spare moments, which they very seldom have. The great importance of a pure and wholesome food supply should of itself be sufficient to show the need for the appointment by Local Authorities everywhere of specially-trained Food Inspectors. It is not only ridiculous, but dangerous to the public health to insist that the duties of Food and Sanitary Inspectors should be combined, inasmuch as they have very little in common.

DANGERS OF TINNED FOODS.

Notwithstanding the repeated warning to the public by both the medical and law press, with regard to the dangers which attend the use of tinned foods, cases are constantly occurring in which death may be traced, either directly or indirectly, to the ingestion of articles prepared in this way. On Saturday last Dr. Danford Thomas held an inquest at the Islington coroner's court into the death of a boy who purchased a box of sardines for which he had paid 2½ pence, eating the whole of the contents. The lad died on Wednesday, January 24, from the effects of acute inflammation of stomach and bowels. Much of the potted stuffs which are sold at a low price are prepared abroad, and after passing through the hands of the wholesale agents in this country is sold to numerous purchasers, who affix various labels upon the tins, and the same goods may be sold to the public under the names of different brands.—*London Lancet.*

ADULTERATED TEA.

In a report just issued by the arbitration committee, of New York, it is stated that "the Chinese are sending over larger quantities of adulterated tea than ever before." Inspector McGay says: "I think that they are emboldened to do this by the fact that in recent years 20,000 packages which I had rejected were admitted by arbitration, and shippers in China are consequently disposed to send over as much tea as possible, and take their chances of its being admitted. This is not being done by merchants in this city, who are as anxious as I am that spurious tea shall be kept out of the country, but by the Chinese themselves. I stand between the reputable merchants of this city and the Celestials, who would otherwise flood the market with an adulterated and spurious article.

"Pure Pingsuey, or shotty gunpowder, as it is called, is a very palatable article, but the adulterated stuff that I rejected was composed of exhausted and spurious leaf, rolled into gunpowder pellets and given consistency and weight by a peculiar paste, known as Congee paste. This is made by the Chinese from Sing Poo mud and rice water. To the eye these pellets of so-called tea appear all right, but as soon as they are put into the testing cup the paste loses its adhesion and the Sing Poo mud comes to the surface, creating a peculiar scum. The pellets are colored with gypsum, indigo, soapstone and silicon. The difference in taste between pure Pingsuey and the adulterated article is apparent to the most inexperienced person.

"Some lots of Japan and Amoy teas had been rejected on account of exhausted and spurious leaf and excess of coloring matter, but the quantity of these kinds rejected was not nearly so large as the Pingsuey."

We have packet tea blenders, however, who can improve on the Chinese methods, thanks to the "faking" machine, guaranteed to turn old tea into new.

INVENTIONS, SCIENCE, ETC.

THE AUSTRALIAN BOOMERANG.

BY ANNA HINRICHS.

Relics from all parts of the world show curious missiles that were used as weapons of defense and war; the most singular of these is undoubtedly the boomerang of the black natives of Australia. Its origin is indefinite. All the tribes of Australia have used it, so it is of very remote date. Indeed, it is recorded by Pliny the elder, that in the days of our Lord the Egyptians used a "throw-stick" made of the wood of the aquifolia. This, when thrown and failing to hit anything, would return to the thrower, "so remarkable are the properties of that tree," in the words of Pliny. He evidently did not consider the shape of the weapon, which was like a staff, very unlike the form of the boomerang. A plausible theory traces its invention to the observation of the analogous peculiarities with the leaves of the white gum tree of Australia. The leaves of this tree fall to the ground with a gyrating motion, similar to that of the boomerang. Another peculiarity in common is that when these leaves are thrown straight forward, against the wind, they gyrate and return to the thrower. It is singular that the most wonderful of weapons should have been the result of the ingenuity of the very lowest type of humanity—the Australian aborigine. Another strange fact is that regardless of years of practice, the white man does not become an expert in the use of the boomerang. Though he may be a champion with other missiles, he fails to become a marksman with this weapon of the savage.

The boomerang is the simplest of all weapons. It is made of hard, tough wood; curved, not in the form of the segment of a circle, but in the form of a parabola. A bent root of a tree, having an angle of about forty-five degrees, makes the best of boomerangs; a branch grown at about that angle is also good. In case root and branch are unprocurable, a good boomerang may be cut from a board of hard pine, observing, of course, the proper angle. It is cut flat below and slightly convex on the upper surface.

All boomerangs are not alike, nor are they all made for the same purpose. Some are intended as playthings, others for hunting and fighting. They vary in size, form, and weight. The weight ranges from four to eleven ounces. The blacks of Western Australia use a much lighter weapon than those of the Eastern parts. A typical boomerang is nineteen inches long from tip to tip, two and one-half inches wide in its broadest part, one-half inch thick, and weighs eight and one-half ounces. A native can do almost anything with his national weapon, and in such hands it is greatly to be feared. A man or animal behind a tree, rock, or house, where perfectly secure from bullet or arrow, cannot escape the boomerang when thrown by an expert. It is like a gun possessed of the mystic power of shooting around the corner. To throw the boomerang, hold it in the hand, flat side downward, then with a quick, sharp fling hurl it into the air, simultaneously drawing back the hand, which causes the missile to revolve with wonderful speed. Success in throwing depends upon projecting it at the instant when it will cut the wind at the proper angle. Carefully note the direction of the wind, always throwing against it.

A tribe of genuine Australian aborigines are now exhibiting their wonderful feats at the Columbian exhibition. They throw in different ways. Sometimes the weapon is thrown straight into the air, goes up a few yards, then turns and glides above the ground for a short distance, gyrates on its own axis, makes a wide sweep and flutters back to the thrower. Again, it is made to skim along the ground for at least seventy-five yards, then rises into the air over a hundred feet, makes a great curve, and returns to the spot from which it was hurled. It is also thrown in such a manner as to make numerous great spirall above the thrower in its downward course. Finally, its distinctive peculiarity is that it, apparently, is thrown wide of its mark, at something behind a house or tree, entirely out of sight, yet a skillful thrower will strike that object with fatal surety.

Even when thrown to a distance of two hundred to eight hundred feet, which a native does with ease, it returns to the feet of the thrower, unless it strikes something in its flight. Obviously, that would cause a deviation in its course, if not stop it entirely. It is an erroneous but general supposition that the boomerang always returns to the thrower. When properly thrown and not coming in contact with any object, in its course, it does invariably return. But when aimed at something, so soon as it strikes that object, it either falls or assumes an entirely different flight, but does not return to the thrower.

Another fallacious impression is that scientists have been unable to find a law for the boomerang curve. Such is not the case. Its law is established, but it is an indefinite law, not a fixed law, It could not be otherwise, as the conditions under which it is applied cannot be fixed. The velocity of the wind, the force with which the boomerang is thrown, the distance it travels, together with its size, weight and form, all these factors must be considered in the application of the law, which is too complicated to demonstrate in these columns. The tendency of youth in this age is towards athletic culture. A "Boomerang Club" would afford more healthful exercise, at the same time providing food for the mind in the scientific investigations which it offers, and consequently be of greater benefit and instruction than a "Baseball Team." The day is not far distant when the angular wooden projectile will be as popular as is now the leather-covered sphere.—*Popular Science News.*

CHINESE LANGUAGE.

SOME OF THE CURIOSITIES OF THE "EAR-SPLITTING JARGON."

The superficial observer often refers to the Chinese spoken speech as an "ear-splitting jargon" and to the written speech as 'hieroglyphics.' Frequent visitors to any "Chinese quarter," notably a large "Chinatown," like that of Los Angeles, will soon become so familiar with this so-called jargon as to note that it is far more musical than the English speech. Musicians are authority for the statement that the Chinese language has more affinity (when spoken) with the notes of birds than with the tones of any other language. This is perhaps because the Chinese, having no alphabet, must have many tone combinations to give the various expressions and meanings to the thousands of characters.

Having no alphabet, the Chinese language has more symbols than all of the alphabets in the universe combined, and there are more tone combinations for the expression of those symbols than in all other tongues. Each tone is attached to a character and one character is made to mean several different things, according to the tone used. In Chinese the tone gives the meaning. A word spoken with a falling inflection means one thing, and quite another when spoken with a rising inflection. We often hear a Chinaman, as he walks along the street talking with his companion, utter a word in a falling inflection which sounds like n-go. This means "I." He is talking of himself—perhaps saying how great he thinks himself to be. But if he drawls out the sound long and even he is calling some hoodlum a "goose." He gives the falling inflection to the first syllable and the rising inflection to the last, and in a rather musical voice. This would be a difficult feat for an American.

No matter in what mood he may be he may not and perhaps cannot change the accent. The voice may be louder or in a minor key, but the tones are as inflexible as written words and must be so used, or the exact meaning is lost. All the expressions of human passions—laughter or sorrow—must be expressed by the same inflexible words and precise accents. There are only five tones in the Chinese voice, but as every word has all of its syllables accented there are twenty-five permutations, and these are almost always in constant use, even in ordinary conversation. A question may be asked with or without a rising inflection, according to the word used.

Chinese adjectives are nouns. For "many thanks" it is "thank thank." A "great man" is "greatness man." Sometimes a noun is formed of a noun and a verb, as "barber," whom they call "shave-head teacher." The verbs have neither moods nor tenses, and when your laundryman wishes to tell you that "I have washed," he says 'I pass over wash." Their adverbs are mostly formed by joining together nouns and verbs, as "finish day" for "yesterday." To cook is to "eat rice." Every noun is plural and includes all there is of that article, unless it is limited by the expression "one piece," as "one piece house." Instead of "wife and children" they express "family and wife."

The word woman means "father man." If repeated it signifies "scolding." The noun always remains in the same shape, and the verb has but one form instead of the many known to the English language. The Chinese language has no declensions, subjugations, moods, tenses, prepositions, conjunctions, adverbs, first, second, and third persons, no singular and plural, and no gender except by the addition of a few participles in rare instances. It is evidently simple and easy to learn, one of the simplest and most curious things about it being, as above stated, that every noun, unless qualified otherwise, is plural.

There are about 60,000 characters used in the Chinese language proper, but the average Chinaman no more learns all of those characters than the everyday American learns the 100,000 words in the English language. The Chinaman, however, learns on the average more than does an American in a similar position in life. A Chinaman who can neither read nor write is a rarity. Chinese is not a monosyllabic language, as many suppose, and it is impossible to utter in Chinese any but the shortest sentences in monosyllables.

In writing, the Chinaman makes one complicated but integral character for each word, but that word may be properly spoken in two, three, or four syllables. His syllables are divided by no longer intervals than are his words, and that is what makes his language sound to a foreigner like a singsong jargon. We do not know whether he is telling a story or attempting a song. The Chinese perhaps think the same thing of an American, who bites off his words and swallows them, or telescopes one into another.

Business men in this city thrown in contact with Chinese merchants who speak pure Chinese, say that it is not difficult to learn. Instead of 26 letters, not including the useless &, the Chinese have 500 or 600 syllables, and these are combined into various forms to make the 60,000 words in their "dictionary." These syllables vary in meaning according to the tone in which they are spoken or the strokes used in writing them.—*Los Angeles Cor. New York Post*

CACAO, COCA, COCO AND COCOA.

A CLEARING UP OF A SINGULAR CONFUSION OF NAMES.

A striking example of the ignorance of tropical things on the part of dwellers in temperate regions is to be found in the confusion into which the articles variously termed cacao, coca, coco, cocoa, have been got by shippers, tradesmen, dictionary and encyclopædia makers, and the public following them. There are four widely separated vegetable growths that are variously mixed under these names.

The first, cacao, is well placed in the genus theobroma, a name given it by Linneus, and signifying "food for the gods." The specific name comes from Portuguese "cacau," in turn derived from the ancient Mexican "cacautl." Its name is almost universally spelled cocoa in the United States and England and confused with the cocoanut of the palm tribe, with which it has far less natural affinity than has the rose with the pear. All the dictionaries confuse or misapply these names. Even the Encyclopædia Britannica talks of the cocoa tree, and, though admitting that it is "more properly cacao," says under that heading "see cocoa." Worcester's school dictionary actually says, "Cocoa, a beverage made of the cocoanut," which is quite as accurate as it would be to define gooseberry pie as a product of the asparagus plant.

The cacao is a small evergreen tree from fifteen to thirty-five feet high under cultivation and higher in its native forests. Though a native of America, from Mexico to Peru, it was introduced into Africa over 200 years ago, where it has since escaped from cultivation and may now be found growing wild. Its somewhat egg-shaped pods are from five to twelve inches long, with a thick, almost woody rind. Ten elevated outside ridges indicate five-celled fruit. This contains from 25 to 100 seeds, imbedded in the sweetish pulp. These are the "cacao beans" from which are prepared seed. The tree must have plenty of heat and rain, a deep, rich soil and but little wind. The best cacao is that of Venezuela —Caracas cacao.

The cacao pods are gathered twice a year, in June and December. Roasted and divested of husks, the pods become "cacao nibs"; ground into paste, sweetened and flavored, they yield chocolate; in a crude, unsweetened paste, cacao, erroneously called coco, with the oil extracted, dried and powdered, "broma," and the oil of the seed yields a non-rancid fat, "cacao butter," much used in pharmacy.

The second of our quartette, coca, often incorrectly spelled cuca, is a shrub closely resembling blackthorn and a native of the Andes, attaining six or eight feet in height, with straight branches and brilliant green leaves. The latter, when chewed, produce a sense of warmth in the mouth, having a pleasant, pungent taste.

Of coco much less can be said than of the others. So little of it is known in the Northern countries that the dictionaries and encyclopedias with one exception ignore it. It yields a root, which, properly cooked, is not unlike sweet potato, and which I have found palatable and very nourishing. It is not of sufficient value, however, to come into general use where either potatoes, breadfruit or plantains abound.

The last of our quartette, the cocoanut palm, is the most widely distributed of the tropical growths and without exception the most useful of any single one of nature's products—save earth, air and water.

The cocoanut palm, which the Encyclopaedia Britannica erroneously thinks should be called cocoanut, grows from 40 to 110 feet high, and is sometimes 2 feet in diameter. The trunk is exceedingly elastic. I have seen trees 75 feet high bend in a hurricane till their tops touched the ground and then right themselves, uninjured, a moment after. The leaf, sometimes over twenty feet long, has a midrib bordered by many long leaflets, the whole resembling a mammoth feather. The nuts grow in bunches of ten to twenty, are twelve to eighteen inches long and five to nine in diameter.—*San Francisco Chronicle.*

MEDICAL.

THE NAILS.

Sulphur is especially useful in improving the nutrition of the nails. Sulphur is a normal ingredient of nail-tissue, in which it exists in a comparatively large proportion. It is consequently an excellent remedy in cases where the nutrition of the nails is perverted. In such conditions sulphur may be justly regarded as a specific nutrient remedy.

The mode of administration is an important point. It should be given regularly for a lengthened period in minute doses, such as five grains three times a day. Administered in this manner sulphur not only directly supplies the nail with an element necessary to its healthy life, but it also exerts a beneficial influence upon the composition of the blood. Sulphur is of material assistance in the treatment of the constitutional disorders upon which the trophic changes in the nails depend. This remedy possesses a decided value in the management of chronic rheumatism. From its action upon the liver and intestinal glands, sulphur is noticeable in the treatment of anemia and chlorosis. I have found sulphur of much value when the nails are brittle and marked by white spots or ridges. As an excellent local application in the same conditions, I can recommend an ointment containing from ten to sixty grains of the oleate of tin to the ounce of excipient. To this, for the sake of elegance, may be added a little carmine. When rubbed along the nail and the surface surrounding it, the ointment of tin oleate improves the structure and lustre of the nail.

ILL EFFECTS OF TOBACCO ON THE THROAT AND NOSE.

BY WILLIAM T. CATHELL, M. D., BALTIMORE, MD.

From a lecture on this important subject we make the following extracts and commend them especially to cigarette fiends:

For the same reason, no one with decayed or broken teeth, or dental plates that rub the gums, or cut the tongue or mouth, should either smoke or chew, for either of these may be the fatal starting point. I have the record of five cases of epithelial cancer of the lips and tongue, four of which occurred in great smokers. Mrs. General U. S. Grant told me, in 1886, that General Grant's fatal case of throat disease began by his abrading a spot in the pharynx with the rough skin of a peach he was eating, and I have but little doubt that constantly bathing this abraded surface with tobacco smoke and tobacco-laden saliva, while his blood was already drenched and saturated with tobacco poison, did its fatal work for him.

Further, tobacco certainly acts as a depressant to feeble people and lowers their stamina; and such persons with a cancerous diathesis or a syphilitic taint, or a scrofulous constitution, should not use it in any form, for in all such subjects the delicate pulpy tissue of the mouth, throat, and nose is very prone to inflammatory action, and also to ulceration from smoking or chewing, and in a large proportion of cases these degenerate into or light up the affection their predisposition or constitution indicates; and, in my opinion no one who is aware that he has inherited a diseased or weak constitution, or defective vitality, should risk reducing his stamina further by the use of this agent; and science, in the form of physiology and chemistry, teaches, and my experience confirms, that if such an one uses tobacco while growing and maturing, he will not only have a weaker body and a weaker brain, but he will also be much more liable to catarrhal ailments of the upper air-passages; and I am quite sure that all throat and nose specialists will agree that tobacco has a softening and relaxing influence on the mucons membranes of the mouth, throat and nose, in many who attempt its use, and induces catarrhal and other affections, and that it is unwise for certain varieties of defective people to risk its bad effects.

Neither can persons suffering from any form of neurasthenia, smoke or chew without injury, and yet these are the very persons who oftenest have the *furore tabaci*; some smoking innumerable cigarettes, or lighting one cigar after another, until they smoke six, eight or a dozen a day.

Smoking also creates in some persons a persistent hacking cough due to tenacious mucus that accumulates in the pharynx and larynx, dependent on a morbid, infiltrated condition of the tissues of the palate and throat, which often degenerates into a condition that closely resembles clergyman's sore throat, or into diseased throat and post-nasal catarrh combined. I make an emphatic interdiction of tobacco in all such cases.

I am also convinced that in some people there exists a close sympathy between the olfactories and the nerves of the mouth, and that in some the frontal sinuses are also invaded after tobacco excesses, as gravedo and frontal headache often attest.

Besides the classes I have spoken of, whoever else finds that tobacco is injuring him should stop its use; but, unfortunately, many of those it is affecting never realize that it is doing them any harm, attributing all their ailments to other causes.

When tobacco induces a sense of tumefaction, heat and pricking in the throat, it should be let alone; and those whom it occasionally makes sick, and persons with a poor appetite, and those recovering from wasting sickness, are among the ones it injuries most.

The habit of swallowing tobacco smoke and then expelling it through the nose, and also of coughing it into the lungs, are both very injurious, as they irritate and dry the mucous membrane of the pharynx, larynx, and trachea, and subject them to the various tobacco affections. Blowing it through the nose is also harmful, as it is a fruitful cause of the hypertrophic thickening of its mucous membrance, so often discovered in smokers, and the sense of smell is also greatly impaired by smoke blowing.

I would not be understood to say that tobacco induces these affections only, but it is chiefly with them that I come in contact.

There is in mind a strong suspicion that the high degree of injury that follows cigarette smoking is not due solely to the tobacco they contain, but is also due in part to its union with the so-called rice-paper wrappers in combustion; and I would here emphasise that in all smoking, and in chewing, too, much depends on the quality of the tobacco.

I can usually distinguish the oral cavity of the person who carries smoking to excess by the dusky red, velvety, or hyperæmic appearance of the lining of the mouth, throat and nose, and by the throat becoming irritable and hoarse upon every effort in speaking and singing.

Tobacco cautiously used is certaininly a charming pleasure in ripe manhood and a solace in old age, and is rather beneficial than otherwise to thousands of healthy but careworn and toilworn people, and also to tens of thousands of soldiers, sailors, and other idle people on whose hands time hangs heavily; and were one to ask me how to get the good out of it without risking the bad, I should advise him, among other things, to avoid smoking another's pipe, for fear of contracting disease—the largest indurated specific sore I ever saw was on a colored man's lower lip, contracted from another's pipe; also, never to even smoke his own after it had become blackened and oil-soaked, and also never to light a stale stump or habitually smoke a short-stem pipe.

A cigar-smoker, or a cigarette holder, or a new or freshly burnt clay pipe, in point of safety and cleanliness, is far superior to putting mouth-to-weed in smoking, and one's whole mouth and throat should be thoroughly cleansed with water after every smoke.

Neither striplings with unformed constitutions nor weakly growing youths should venture to either smoke or chew, because in youth the vital centres are all unripe and delicate, and the mucous membranes are then marvelously hypersensitive to the effects of smoking and chewing; and if a growing boy's or an undeveloped puny youth's mucous membranes absorb either nicotine or the empyfeumatic oil of tobacco, it poisons his springs of life and stunts his development mentally, morally, and physically; and if he expectorates these poisons, then the loss of saliva lessens the growth and repair of his delicate and easily-injured vital centres, and I am positive I have seen more than one unripe devotee stunted in body and mind, and I could at this moment name half a dozen young men and boys who are injuring their throats and noses with cigarettes, who will later in life have granular or follicular pharyngitis, somewhat akin to clergyman's sore throat, with an annoying discharge of mucus from the posterior nares into the throat, with relaxed tickling uvula, which may hang on for years, and neither get well nor kill, but be an annoyance to himself and to every one around. I know a feeble, narrow shouldered young man who is at this moment cigaretting himself to either the invalid's couch or the grave, through his delicate mucous membranes; and we, as hygienists, can do the weakly ones of the rising generation no greater service than to point out tobacco's injurious effects on their throats, upper air-passages, etc. I have observed but few youths whose mucous linings could endure tobacco's toxic influence without showing symptoms of weakness, morbidity, and disease; and were I to recast our pharmacopœia I would not only call hyoscyamus hensbane, aconitum wolfsbane, and arsenic ratsbane, but would be strongly tempted to give tobacco the synonym of youthsbane.

Some of this tobacco throng will present cases of ozena; others, catarrh of the throat and nasal passages, buccal inflammation, epiglottitis, relaxed and tickling uvula, chronic tonsillitis, laryngitis, trachitis, hoarseness or nasal twang in talking, due to thickening within the larynx, loss or impairment of smell, rotten breath, etc., which can easily be interpreted by the experienced; and I risk nothing in asserting that 5 per cent of all constant smokers and 10 per cent of all constant chewers, and 25 per cent of all who constantly do both, are affected with one or another of these affections, and not 36 per cent of immature and sickly smokers' throats and noses will be found in a perfectly normal condition.

SIMPLE DIET IN OBESITY.

The *Journal de la Sante* attributes to a medical officer of the French army the latest "cure" for obesity, which is strangely simple in its carrying out. The form of diet was simply a restriction to one dish at each meal, irrespective of what that dish might be, and no matter whether the quantity consumed was greater or smaller, it was made to satisfy the desire for food to the full at each meal. No supplementary dishes, such as soups, desserts, or condiments, were allowed; one single dish, and that taken plain, was found to satisfy the appetite much sooner than a variety of dishes, even if the quantity was apparently smaller and on almost an abstemious scale. This regimen was employed also in the case of a lady whose embonpoint threatened too rapid increase with good results, and without any discomfort in the observance of the restrictions. In fact, in one or two instances the reduction of corpulence has seemed to go on too rapidly, and it has been deemed best to take means for restoration, in a measure, of that which has been lost. Under this system, as under most others, adds *Popular Science News*, the excessive imbibition of liquids has to be forbidden, care being taken not to enforce the abstinence from water, especially to the point where symptoms of circulatory depression arise from insufficiency of volume of blood in the vessels.

HEADACHE DUE TO RAILWAY TRAVELING.

Dr. A. N. Blodgett (Boston *Med. and Surg. Journal*) in discussing the subject of ocular headaches, refers to a form of headache resulting from travel on railroad trains, which he thinks more frequent than commonly supposed. Treatment by any of the methods usually employed is generally without benefit. An explanation was once given him by Mr. Fox, the consulting engineer entrusted with the construction of the railway tunnel beneath the river Mersey, at Liverpool. In the journey between Liverpool and London Mr. Fox incidentally made the remark that he always sat with his back toward the engine. The English cars are built with transverse compartments so that the passenger is obliged to sit on a fixed seat, and therefore half the persons in a compartment are forced to sit with the back toward the engine. Mr. Fox took that position from the fact that his eyes were thereby rendered much more comfortable during the journey. He thought that was due to the avoidance of the repeated and sudden strain in the accommodation which is rendered necessary if one is looking at a series of rapidly approaching objects, as when traveling in a train. The effect was like a blow upon the eye. If the traveler be looking backward the object would be constantly receding and the strain of accommodation was continually letting up, and caused no discomfort whatever. That seemed to be a very ingenious and logical explanation why some people suffer from headache and vertigo in railroad traveling. Since that time he has directed car-sick travelers to ride backward, and has adopted this method himself, with the greatest comfort.

MISCELLANEOUS.

PHILIP D. ARMOUR.

Arthur Warren, in a recent letter to *McClure's*, thus speaks of Mr. Philip D. Armour of Chicago: "Mr. Armour is not a mere speculator, or, as the ambiguous giving out of the exchanges has it, an 'operator' in the necessaries of life. He is something more than the richest man in Chicago; he is perhaps the greatest trader in the world. But that is not all. He is one of the greatest manufacturers in this or any other country. In this capacity alone he employs 21,000 persons, pays six or seven millions of dollars yearly in wages, owns 4,000 railway cars which are used in transporting his goods, and has 700 or 800 horses to haul his wagons. Fifty or sixty thousand persons receive direct support from the wages paid in his meat-packing business alone, if we estimate families on the census basis. He is a larger owner of grain elevators than any other individual in either hemisphere; he is the proprietor of a glue factory which turns out a product of 700,000 tons a year, and he is actively interested in an important railway enterprise."

SWINDLES BY MAIL.

BY RENE BACHE, IN BOSTON TRANSCRIPT.

The mistakes of country postmasters give endless trouble and anxiety to the Post Office Department at Washington.

For example, there is the business of giving information to swidlers. Dishonest persons write to postmasters all over the Union, offering gold watches or valuable books in exchange for lists of the names of people who get mail at their post offices. In this way they get hold of innumerable "alive addresses," among which to distribute their fraudulent advertisements. The Government of late has been trying hard to put a stop to this scheme.

The rural postmaster furnishes the list required of him, and waits hopefully for his watch. It is hardly necessary to say that he never receives it. Meanwhile, complaints of the sharper have reached the Post Office Department. He is doing business, may be, from Jersey City. The postmaster there is instructed to hold his mail unless he will identify himself. This frightens him, and he fails to comply. His letters go to the Dead Letter Office at Washington, where they are opened. The postmaster's list of names being found in one of the envelopes, a sharp note is sent to him, asking what excuse he has for violating the regulations which positively forbid the giving of such information.

Nevertheless, in the perpetual struggle that is maintained between the Post Office Department and swindlers who conduct their enterprises through the mails, the latter have steadily the best of it. Now and then one of them is caught and punished, but such an occasional episode does not seriously interfere with this species of criminal activity. Many complaints have come in recently to the effect that postmasters are selling lists of names and that respectable persons in various parts of the country are receiving objectionable medical pamphlets and fraudulent literature in quantities. Those petty Government officials, in fact, too often serve innocently as intermediaries between swindlers and the people. They are utilized as cat's-paws for working all manner of "fakes" and "skin games" at the expense of a confiding public.

At one of the most remarkable of such frauds an effective blow has been dealt by the arrest and conviction, a few weeks ago, of a man whose ingenious tricks have puzzled the police here and abroad for a number of years past. This was the individual who, under the name of William Lord Moore, conducted a so-called "claim agency" in London, advertising to procure in England legacies and estates amounting to many millions of dollars for persons in this country alleged to be entitled to them. Of course, the said estates and legacies were wholly mythical. The method adopted was to send to country postmasters all over the United States circulars which they were requested to tack up in conspicuous places. The documents thus distributed gave notice that large sums were due to persons who were believed to reside in that vicinity, wherever it might be.

Naturally, the number of answers in responce to those circulars was enormous. Persons who replied in the hope that they might be entitled to the fortunes referred to were informed that they were happily not mistaken. But, before their claims could be acted upon, they were required to send $25 to William Lord Moore, in London, for preliminary expenses. The money being forwarded, nothing more was heard of it. Undoubtedly the sharper gained an immense sum in this way. He gave no end of worry to the Post Office Department, which was helpless because the circulars and letters were mailed in England.

The British authorities, being asked for help, became greatly interested in the case, but the Scotland Yard detectives tried for years in vain to hunt William Lord Moore to his hole. Efforts equally fruitless were made to corner a person called Leger, who acted as Moore's agent in New York. Finally, Moore was run down in London, and, England being too hot to hold him, he slipped away to the United States. He was captured in Chicago, but escaped from the marshal who had him in charge.

Before finishing the story, it is necessary to go back about twenty years and review the romantic career of a person known as the Rev. George Frederick Burgoyne Howard. He was an Englishman, the son of a policeman. For a while he was in the Royal Navy, and afterwards he served in the United States Navy, from which he deserted. He taught a negro school in South Carolina and during the epoch of the carpet-bag he was a trial justice in that State. To escape prosecution for malfeasance in office, he fled, eloping with the wife of a railway man. Later on he deserted her, went to Georgia, and became a Baptist preacher.

The Rev. G. F. B. Howard had a large red beard, hair of the same color, and a most plausible address. He possessed no morals worth mentioning, but his cheek is described as amazing. After awhile he turned up at Jackson, Tenn., as pastor of a church. Scandal caused by his doings split the congregation in two, one part standing by the preacher and starting a new church under his ministration. He left that town and went to New York, where he set up a "claim agency," under the name of Leger. The business was of a kind that could be conducted more safely and advantageously from abroad, and so he transferred it to London, where he called himself by various aliases, while known to correspondents from this side of the water as William Lord Moore.

How he was finally caught has been already told. After escaping from the marshal he went back to Jackson, Tenn., and gave himself up, to bluff it out. He was again the Baptist preacher, and knew nothing of William Lord Moore or his business. It was all a case of mistaken identity.

Unfortunately for him the government was determined to spare neither pains nor expense in procuring his conviction. Witnesses were brought from abroad to swear that he was William Lord Moore and none other. Ex-Minister Lincoln and ex-Consul General New, who had seen the man in England, went to Jackson for the purpose of giving their testimony. The defence of the prisoner, conducted by himself, was a masterpiece of ingenious effrontery. Nevertheless, he was sentenced to nine years in the penitentiary.

A typical fraud of the sort worked through postmasters is that of the piano prize. The swindler offers by circular 100 pianofortes free to the first 100 persons who send in applications to his "manufacturing firm." It is explained that the proposition is intended as an advertisement. Everybody who is so foolish as to answer is a winner, of course, and is informed that the instrument will be forwarded on receipt of $2.50 to pay for expressage and packing. The victim sends the money and in due time receives the piano. It is a miniature pianoforte, worth about 35 cents at any toy store.

A good many "skin games" of this character are conducted through the mails. For example, the sharper procures from postmasters the names of farmers in their respective neighborhoods He sends to them a circular offering to each recipient a corn-shucker free, on condition that he will exhibit it to his neighbors and speak favorably of it. The innocent agriculturist replies, and a demand made upon him for $1.75 "for expressage and packing" produces the money. In return the victim, who supposes that he is going to obtain a valuable machine, gets nothing more nor less than a piece of hoop-iron, worth about half a cent.

Instead of a corn-shucker, it may be a mowing machine sharpener. The victim sends $1, and gets in return a piece of pine wood dipped in emery, value about half a cent. One swindler awhile ago offered to credulous persons "a fine steel engraving of George Washington" for $1. In acknowledgment of the cash he sent a two-cent postage stamp. The post office department was not able to do anything in this case, because the perpetrator of the cheat had unquestionably performed the letter of his agreement.

A new kind of quasi-fraud has recently engaged the attention of the department. So-called publishing companies circulate advertisements in which they offer a prize, usually $20, to anybody who sends in correct guesses of certain "skeleton words." These words are partially spelled, some of the letters remaining to be supplied. They are so simple that anyone who knows how to read can do them at a glance. It is explained that every person who finds out one or more of the words will receive a proportionate sum of money.

In due time every guesser is informed that he or she is a winner. But—here comes in the inevitable requirement—$1 must be sent to the publishing concern, as a year's subscription to a periodical, before the prize is payable. Having obtained the $1, the firm discovers that there was a mistake, and the puzzle, which is so arranged that the skeletons will fit more than one set of words, was not guessed correctly after all. Nevertheless, it is disposed to be liberal, and the subscription "goes" just the same. The periodical, of course, is worthless.

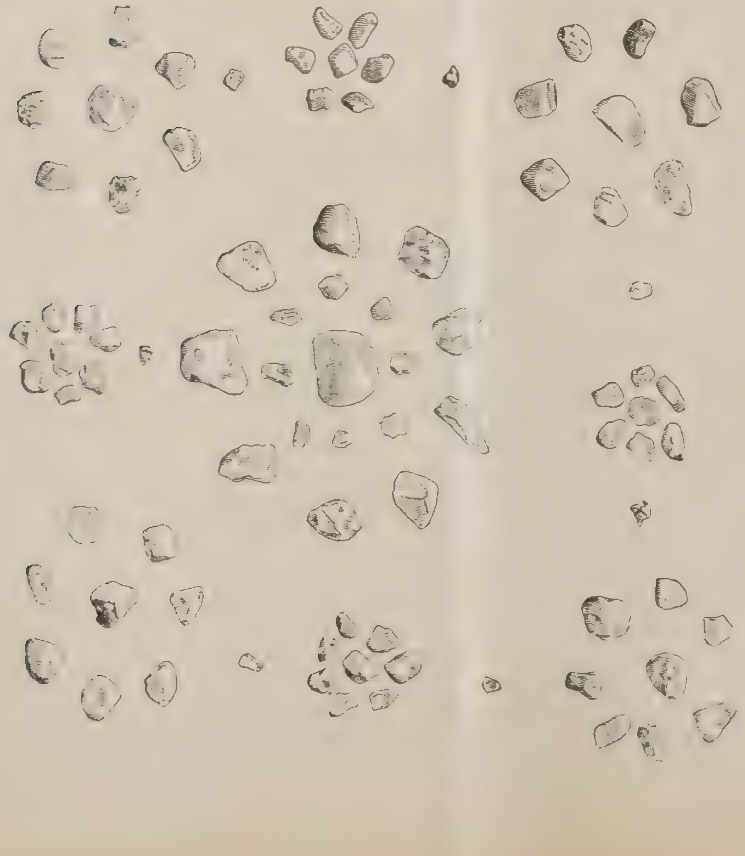
The Post Office Department only the other day shut up the business of an alleged publishing company in New Orleans which distributed circulars among school teachers all over the country, offering a complete set of Dickens' works for $1. Its practice was simply to gobble the dollar and refrain from further correspondence. There is another dodge of superior ingenuity which consists in advertising to give away a check for $100 with every two, or it may be three, watches purchased. The check is good enough, probably, but it is made payable only after the buyer has sold a sufficient number to net $100 in profits for the manufacturing firm. Inasmuch as the firm keeps its own books, it need not pay the $100 until it gets ready.

It will be observed that these swindles prosecuted through the mails are all of the meanest possible character. Most of them are intended to victimize poor people. Of such a nature are the offers of bogus patent attorneys, who get money out of inventors by pretending to be able

BUFFALO LITHIA WATER

A POWERFUL SOLVENT OF STONE IN THE BLADDER.

The following plate is from a photograph and represents the exact size and shape of Calculi passed by the Hon. T. J. Jarrett, ex-Mayor of Petersburg, Va., under the action of Buffalo Lithia Water.



The original stone shown in the cut together with one from a similar case, will be on exhibition at Ditman's Pharmacy, Astor House, Corner Broadway and Barclay Street, New York, from where water may be obtained.

Statement of Dr. John Herbert Claiborne, M. A., M. D., of Petersburg, Va., ex-Presiden and Honorary Fellow Medical Society of Virginia.

PETERSBURG, VA., Sept. 5, 1892.

E. C. LAIRD, Buffalo Lithia Sprnigs, Va.

My Dear Doctor:—I send by this mail a box of CALCULI, passed at various times within the last year by Hon. T. J. Jarrett, our former mayor, whilst drinking the BUFFALO LITHIA WATER. They give him but lttle pain now when passing. I have never critically examined the broken CALCULI, passed in such quantities from Mr. Jarrett's bladder, but am under the impression that the most of them were MANESIAN PHOSPHATES. There were specimens, however, which presented the appearance of OXYLATES, and, I remember, impressed me specially as being URIC ACID. I do not pretend to account for the mode of their solution by the Buffalo Lithia Water. There is nothing in its analysis which would warrant such results, but THE RESULTS ARE THERE, and seeing is believing. I can only suppose that in Nature's alembic there has been some subtle solvent evolved, too subtle to be caught by our coarse agents, which makes this wonderful disintegration. "There are many things in heaven and earth not dreamt of in our philosophy," and his is a short creed who believes only what he can prove or explain. Faithfully yours, JOHN HERBERT CLAIBORNE.

It is well known that stone in the bladder, for the most part Gout, Rheumatic Gout Rheumatism, and also various forms of Dyspepsia and Nervous prostration have a common origin, viz.: excess of uric acid in the blood. It is evident, then, from the foregoing statement, that this water must possess extraordinary potency alike in all of these maladies. In Bright's Disease of the kidneys it is well-nigh specific.

Water in cases of one dozen half-gallon bottles, $5.00, f. o. b. here, and for sale by all first-class druggists.

Illustrated 32-page pamphlet, giving further information, sent prepaid on application to

THOMAS F. GOODE, Proprietor,

BUFFALO LITHIA SPRINGS, VA.

to place the latter in communication with capitalists disposed to furnish cash for putting their contrivances on the market. Other cheats advertise so-called "endowment" concerns, which endow nobody but the managers, though the prospects are ever so alluringly set forth on paper. There are the pretended detective agencies, which wring small amounts from unsophisticated young men by making believe to employ their services as "representatives" in one part of the country or another, but never giving any work to do. Sufficiently familiar are the sharpers who offer crayon portraits free, subsequently demanding large prices for cheap frames to enclose the worthless pictures. "Valuable time-keepers" purchased by rural bumpkins turn out to be sundials. Of course, nobody has any sympathy for the people defrauded by the green goods game; they deserve all they get.

One of the most remarkable swindles ever heard of was set on foot recently by the estabment of more than a score of small post offices in South Carolina. The chief conspirator was quite a prominent man in that part of the country, named Barret, and it was by his influence that the department was persuaded to create the offices, appointing as postmasters men whom he selected. The whole business was fictitious, the localities chosen being uninhabited. Nevertheless, the postmasters were able to procure large quanities of goods, paying for some of them with postage stamps furnished by Uncle Sam, and obtaining credit for others. To square accounts at Washington, they rendered false affidavits as to cancellations. The fraud was exposed by an inspector who, traveling through that region, quickly found out what was going on.

Postmasters in small places are often called on by congressmen and politicians to furnish lists of names of those persons in their bailiwicks who are likely to be influenced with reference to voting by judiciously-selected partisan literature. This is an abuse which the Civil Service Commission is most anxious to put a stop to. Of course the postmasters represent whichever party may be in power at Washington, and it is unquestionably a fact that they have frequently been employed to propagate political doctrine. They have even been accused of discriminating against opposition documents in the mails. However, it cannot be denied that they are far more sinned against than sinning, being commonly employed as innocent agents for the prosecution of frauds in which they have no share or profit.

◆

PROTECTING COTTOLENE.

The N. K. Fairbank Company of Chicago have lately brought suit in the United State Court against W. L. Henry, of this city, for $5,000,000 for infringement of their trade mark "Cottolene." The N. K. Fairbank Company sets forth that they originated, prepared, and put upon the the market a new food product consisting of refined Cotton Seed Oil and a small proposition of Beef Suet, making a pale yellow material of the consistency and substance of lard, almost without odor and intended to take the place of lard in cooking.

In order to indicate the source and genuineness of their new food product, they originated, coined, and use as a trade mark, the word "Cottolene." The healthfulness and many other advantages of Cottolens over lard were so apparent that Cottolene became at once very popular and is now largely sold all over the country.

The new food product and its name "Cottolene" have become wildly known as the product of The N. K. Fairbank Company. The trade mark is described as a "trade mark for Oleaginous Food Substances, &c," "consisting of a head or neck of a Steer or other bovine partially enclosed by sprigs and branches of the Cotton plant.

The N. K. Fairbank Company charges that W. L. Henry, of Macon, Ga., a dealer in fresh meats and food products generally, has been and endeavoring unlawfully to avail himself of the benefits of the name "Cottolene" and its popularity; that he has been and is selling a product similar in kind, but inferior in quality, under the name of "Cottolene" to the injury of the original and genuine "Cottolene," and to the loss and injury of its manufacturers The N. K. Fairbank Company.

The infringements upon the trade mark of "Cottolene" have become so frequent, and so many dealers are selling an inferior article and claiming it to be Cottolene that The N. K. Fairbank Company are determined to protect their customers and propose to sue every retail dealer who is thus imposing upon his customers and infringing upon The N. K. Fairbank Company's trade mark.—*Telegraph, Macon, Ga.*

LITERARY NOTICES.

THE REFRACTIONIST.

A Journal of practical ophthalmology, intended to be an exponent of the Refraction world. Published monthly. Editor, Francis F. Whittier, A.M., M.D., Professor Clinical Ophthalmology, College of Physicians and Surgeons; Oyhthalmic Surgeon, St. Elizabeth Hospital; formerly on Resident Staff, Mahattan Eye and Ear Hospital, etc., 74 Boylston street, Boston. With associate editors. Subscription price, $2,00 yearly.

DIOVIBURNIA

UTERINE, TONIC, ANTISPASMODIC AND ANODYNE.

A reliable and trustworthy remedy for the relief of Dysmenorrhœa, Amenorrhœa, Menorrhagia, Leucorrhœa, Subinvolution, Threatened Abortion, Vomiting in Pregnancy and Chlorosis; directing its action to the uterine system as a general tonic and antispasmodic it is unexcelled.

FORMULA.—Every ounce represents 3-4 dram each of the fluid extracts: Viburnum Prunifolium, Viburnum Opulus, Dioscorea Villosa, Aletris Farinosa, Helonias Dioica, Mitchella Repens, Caulophyllum Thalictroides, Scutellaria Lateriflora.

ST. LOUIS, MO., June 23, 1888.

I have used DIOVIBURNIA enough to satisfy myself of its merits. It is of unquestionable benefit in painful dysmenorrhœa; it possesses antispasmodic properties which seem to be exerted especially on the uterus.

Dr. H. Tuholske

Professor of Surgery, Post-Graduate School.

ST. LOUIS, MO., June 18, 1888.

I have given DIOVIBURNIA a fair trial, and found it useful as an uterine tonic and antispasmodic, relieving the pains of dysmenorrhœa and a regulator of the entire uterine functions. I feel authorized to give this recomendation.

L. Ch. Boisliniere

Professor of Obstetrics, St. Louis Medical College.

ST. LOUIS, MO., June 18, 1888.

For more than a year I have prescribed DIOVIBURNIA. In those cases that I have been able to follow up, found that they derived much benefit from its use in almost every form of dysmenorrhœa—especially the conjestive form. I am so pleased with it that I now prescribe it almost daily.

T. L. Papin M. D.

Physician in Chief and Gynecologist to St. John's Hospital.

ST. LOUIS, MO., June 20, 1888.

I very cheerfully give my testimony to the virtues of a combination of vegetable remedies prepared by a well-known and able pharmacist of this city and known as DIOVIBURNIA. I have employed this medicine in cases of dysmenorrhœa, suppression of the catamenia, and in excessive leucorrhœa, and have been much pleased with it. I do not think its claims (as set forth in the circular accompanying it) to be at all excessive.

Jno. P. Johnson

Professor of Principles and Practice of Medicine, St. Louis Medical College.

DOSE.—For adults, a dessertspoonful three times a day, after meals. In urgent cases, where there is much pain, dose may be given every hour or two, *always in hot water*. Put up in Eight Ounce Bottles.

To any Physician, unacquainted with the medicinal effect of Dioviburnia and Neurosine, we will mail pamphlets containing full information, suggestions, commendations of some of the most prominent professors in medicine and various methods of treatment. Or to those desiring to try Dioviburnia and Neurosine, and will pay express charges, we will send on application a trial bottle of each.

DIOS CHEMICAL COMPANY, ST. LOUIS, MO.

SPRING HOUSE CLEANING.

Chaotic piles of furniture fill the halls and piazza; rugs dangle from the windows; the whitewash bucket lies in wait for all comers on the back-porch steps; carpet beating goes on in the yard; the smell of soapsuds is all abroad and the air pulsates with the heated speech of the man taking down the stovepipe, and the plaint of the woman who drove a nail, for spring house cleaning is in full blast through the length and the breadth of the land. How many are reminded by this general object lesson, of another house cleaning, infinitely more important and indeed imperative at this particular season of the year? Each one of us occupies a house for which the only rent required is the careful keeping of it clean and in good repair, but upon that condition continuance of tenancy absolutely depends. That house is the body. Every intelligent man knows that his real self is his soul, not his corporeal form—subject to accidents, disease and death. Our common use of the possessive case when referring to the body and its members, or organs, bespeaks intuitive perception of this truth. One says "my liver," not "I liver," but if he lets that particular part of the house he inhabits get badly out of repair, he is liable to be speedily ousted from possession by Owner Nature, as a careless and unworthy tenant.

Yet how much more care we bestow upon cleaning the wood or brick tenement, in which we shelter our immediate fleshly houses, than we do upon the latter. Scrubbing, washing, sweeping and dusting go on all the time in the former; hardly ever, except under the pressure of a threatened ejectment by disease in the latter. Such threats are apt to be made in this spring weather; not very sharp and angry at first perhaps, merely some pimples, pustules, rashes and perhaps boils, but certain to become more severe and mandatory in a little time if due attention is not paid to them. All winter, by lack of care, we have been allowing dirt accumulation to go on in the stomach, bowels, liver and kidneys, which are so many rooms of the house and the blood which circulates through the mansion, to every part—as the air does in the tenement we care for so much better—has been vitiated and made a carrier of poisonous germs to the most remote apartments, the lungs, heart, brain and even the external wall, the skin. Now let us go to work and clean this house. Begin at the beginning place, the organs of digestion. Our endeavors will be but in small degree effective if we simply employ a purgative, however drastic. That would be equivalent to sweeping the halls and stairs, but leaving the rooms uncleaned. Here is what our spring cleaning must do to be effective. It must cleanse the stomach and bowels; stimulate the activity of the semi-torpid liver and invigorate that most important organ for the continuous performance of its duties; free the kidneys from the foul foreign matter by which they have been clogged in their effort to do a large share of the enfeebled liver's work and give them healthful tone for the exercise of their proper functions and through the revivification of all this complicated apparatus of elimination and discretion, enable the organs of assimilation and secretion by which the nutrition of the body is accomplished, to discharge efficiently their essential service. The most effective medicine for this comprehensive reformation of ill conditions is Ayer's Compound Cathartic Pills, a wholly vegetable preparation, reliable, mild in action but thorough.

Too Slow

in making clothes, this was. It had to go. And yet people thought it a pretty good thing in its day. Some of them couldn't believe, all at once, that there was anything better. Just so with every improvement. The old way always has some benighted ones who cling to it to the last.

Too Fast

in ruining clothes, un-making them — that's the trouble with the washboard. But it's going now and going fast, to join the spinning-wheel. Women find it doesn't pay to rub their clothes to pieces over it. They can wash better with **Pearline**. Less work, less wear, no ruinous **rub, rub, rub**. That's the modern way of washing—safe, easy, quick, cheap. No wonder that many women have thrown away the washboard.

Send it Back Peddlers and some unscrupulous grocers will tell you "this is as good as" or "the same as Pearline." IT'S FALSE—Pearline is never peddled, and if your grocer sends you something in place of Pearline, be honest—*send it back*. 378 JAMES PYLE, New York.

Indigestion

Horsford's Acid Phosphate

Is the most effective and agreeable remedy in existence for preventing indigestion, and relieving those diseases arising from a disordered stomach.

Dr. W. W. Gardner, Springfield, Mass., says: "I value it as an excellent preventative of indigestion, and a pleasant ascidulated drink when properly diluted with water and sweetened."

Descriptive Pamphlet free.

Rumford Chemical Works, Providence, R. I.

Beware of Substitutes and Imitations.

For Sale by all Druggists.

Impermeable and Elastic Cement for the Walls of Cellars.—The following elastic and impermeable application to the walls of cellars or buildings has been patented in France by Fournier-Delattre:

Caoutchouc	125	parts.
Boiled linseed oil	1,000	"
Litharge in powder	375	"
Chalk in powder	7,900	"
Norway tar	600	"

Dissolve by the aid of heat the caoutchouc in the linseed oil, add the tar and stir in the other ingredients, mixing well each one before the other is added. The chalk may be replaced by Spanish white, and the tar by sulphur. This gives an exceedingly impervious paint of great value.

◆

Asbestos Not Reliable.—Recent experiments made in Germany go to show that asbestos paper is not only of no advantage in a floor as a protection against fire, but it probably aids the conflagration.

◆

In a Western school for girls the other day there was a debate on the question "Is Ibid a greater writer than Anon?"

◆

$100 REWARD $100.

The readers of this paper will be pleased to learn that there is at least one dreaded disease that science has been able to cure in all its stages and that is catarrh. Hall's Catarrh Cure is the only positive cure now known to the medical fraternity. Catarrh being a constitutional disease, requires a constitutional treatment. Hall's Catarrh Cure is taken internally acting directly upon the blood and mucous surfaces of the system, thereby destroying the foundation of the disease, and giving the patient strength by building up the constitution and assisting nature in doing its work. The proprietors have so much faith in its curative powers, that they offer One Hundred Dollars for any case that it fails to cure. Send for list of Testimonials.

Address F. J. CHENEY & CO., Toledo, O.

☞ Sold by druggists, 75c.

TEXTILE FIBERS.

HOW TO DISTINGUISH SILK, WOOL AND COTTON FIBERS.

It is customary, says *Textile Industries*, to mix, spin, and weave fibers in various proportions, and as it is important to know the quantities of different fibers contained in goods to be imitated, researches have established a number of tests for this purpose, with which every manufacturer and manager should be thoroughly conversant.

In a fabric composed of linen and cotton, a strong potash solution will color the linen fiber a deep yellow, while the cotton will be only slightly tinged with the color; a mixed yarn or fabric will, therefore, assume a spotted or striped appearance in the liquid. If a sample of the linen to be tested is dipped into olive or rapeseed oil, the fabric will quickly absorb it. When the excess of oil has been removed and the fabric appears striped, it is not pure linen, but mixed, and, further, the linen thread becomes transparent and the cotton thread opaque; while, if the linen saturated with oil is laid upon a dark substance, the linen threads will appear much darker than the cotton on account of this transparency. In order to destroy or dissolve cotton by a process similar to carbonization, the fabric to be tested is laid in a mixture of three parts sulphuric acid and two parts saltpeter for eight or ten minutes, then washed, dried, and, finally, treated with ether containing alcohol. The woolen and linen fibers have remained uninjured, while the cotton has been dissolved.

In order to distinguish animal from vegetable fibert, they may be boiled in caustic potash lye. Both wool and silk will be dissolved thereby, but not linen and cotton. If a sample of woolen goods is examined to see if it contains cotton, place it in a concentrated sulphide of sodium solution; by this, the wool is dissolved and can be entirely washed out in hot water. The residue will be vegetable fiber, and, if the sample was at first weighed exactly, the actual percentage of wool can be ascertained by weighing the remaining vegetable fibers. Such a fabric can be analyzed with greater facility in an undyed condition. Wool and silk, when plunged into picric acid, are dyed a fairly fast yellow, while both linen and cotton remain white.

A silken thread, when exposed to a flame, ignites, evolving a smell of burning feathers, but continues to burn only as long as it remains in contact with the flame, and is extinguished when taken away, the burnt end forming a black, charred substance, thicker than the thread. Wool behaves similarly, but the odor is more repugnant.

The surest and best test, however, is the microscope, which gives unerringly the component fibers of fabric under examination. For this purpose, several threads must be drawn out of the fabric in question (an operation best performed under water) and subjected to an examination with a power of from 200 to 300 diameters.

The linen fibers appear as cylindrical formations, with nodular swellings, the former sometimes split into thinner fibers, especially in the case of linen which has been used.

Cotton fibers, however, will show themselves as flat ribbons, and are very thin as seen where the edge is shown. With mixtures of linen and cotton, the examination of the fibers can be conducted with still greater facility, by opening a small strip of the material to be investigated, introducing it into a dilute alcoholic solution of aniline red (fuchsine), but only for a very short time, after which it is well washed, and then immersed in caustic ammonia for two hours. In this operation the linen fibers are dyed rose red, while the cotton fibers take no trace of color, and their examination is thereby rendered much more easy.

The fibres of wool appear under the microscope as cylinders covered with scales, and their delicate structure is rendered still more visible by treatment with sulphuric acid, which dissolves the yolk that fastens these scales to the fibers; but the different qualities can also be comparatively tested to ascertain the uniformity, firmness, or strength. The microscope is a means of distinguishing the relative value of different wools better than is possible by any other mode. For this purpose, a "wool gauge" has been constructed, consisting of a brass frame screwed to the stage of the microscope, into which the wool fiber is fastened in such a manner that it is first loose, but is gradually tightened with a screw for that purpose, when the diameter can be measured with a micrometer and an exact measurement of the fiber obtained. But as all the fibers are not equally thick, it is necessary, of course, to measure several to obtain the average. To measure the elasticity and strength of the fiber, it is first drawn tight, the index placed upon zero, and the tension increased by the gradual drawing with the screw mentioned until the fiber breaks. The index will show on the scale how many millimeters a fiber may be stretched before it breaks. It is evident that this experiment must be repeated with several fibers, and that same apparatus can naturally be used for this purpose for all kinds of fibers.

Other animal hair used for textile fibers, goat hair, horse hair, etc., can also be recognized and distinguished by the microscope. As for silk, it presents no peculiarities, but is simply a homogeneous cylinder without the scale layer, marrow and bark substance of hair. The optical difference of all these fibers is aided by the microchemical investigation. Iodine and sulphuric acid may be used as reagents, whereby the vegetable fibers, consisting of cellulose, are always colored blue, which is not the case with animal fibers. Silk differs from the latter in that it is dissolved in concentrated muriatic acid.

◆

PERFUMED BUTTER is just now very fashionable at American breakfast and tea tables. The butter is made into pats and stamped with a floral design, and is then wrapped in thin cheese-cloth and placed on a bed of roses, violets, or carnations arranged in a flat-bottomed dish. Over these is placed a layer of flowers, so that the butter patties are embedded in flowers. They are then placed on ice, where they are allowed to remain for several hours. This butter is eaten with crisp Vienna rolls, accompanied only by a cup of chocolate or delicious mocha.

FRYING is not a difficult art if properly managed, but there are few greater stumbling blocks to careless cooks. The fat used should be pure and plentiful. The fish, potatoes, other vegetables or fritters should float in the fat, which must be thoroughly hot. When fat is hot it is quite still, and a bluish mist hangs over it. Drop a crumb of bread in it, and if the crumb is at once browned the fat is hot enough. Some things do not require much fat for frying, such as omelettes, pancakes, etc. For frying these only a little good butter should be used. As a rule fried food when cooked should be put to drain on a heated strainer or placed in a warmed napkin.

"If it were DONE when 'tis DONE, then 'twere well it were DONE QUICKLY."
—*Macbeth.*

and if it is a **Croquette,** or an **Oyster,** or a **Pie,** or a **Doughnut,** or a **Biscuit,** or any other article that needs

SHORTENING

when 'tis *done*, 'twill be *better done* as well as *more quickly done* if you use

Cottolene

The Vegetable Shortening.

It is purer than lard; it is without the objectionable flavor of lard; it heats quicker than lard; it browns better than lard, and does not make food greasy and indigestible as lard does.

Ask your grocer for Cottolene, and accept no imitations. Sold everywhere in three and five pound pails.

THE AMERICAN COTTON OIL CO

Made only by
The N. K. Fairbank Company,
CHICAGO,
New York, Boston,
Philadelphia,
San Francisco,
St. Louis, Montreal.

50 YRS THE ORIGINAL CORN STARCH. 50 YRS

KINGSFORD'S OSWEGO STARCH

THE ORIGINAL

PUREST STRONGEST BEST

Highest Awards

CHICAGO, 1893. PHILADELPHIA, 1876. LONDON. 1851.

Try "SILVER GLOSS."

T. KINGSFORD & SON. Manufacturers. OSWEGO, N.Y. U.S.A.

SOLD ALL AROUND THE WORLD.

BEST QUALITY IS GOOD ECONOMY.

THE STANDARD OF EXCELLENCE FOR OVER FIFTY YEARS.

BUSINESS NOTES.

BROMO-SODA.

St. Louis, Mo.

I have used effervescing Bromo-Soda very extensively, and can cheerfully recommend it to my professional brethren. It is of great value to those practitioners making a specialty of nervous and mental diseases. The addition of the grain of Caffeine Hydrobromate to the thirty grains of Sodium Bromide I think a happy idea. I recommend your Bromo-Soda because I have used Sodium Bromide for years instead of the Potassium Bromide. Sodium Bromide is not a foreign salt in the system, is much less depressant, can be used where the heart is extremely weak, and does not impair the integrity of the muscular tissue. Does not cause bad breath, neither does it cause acne, nor impair pharyngeal sensibility. It is much more palatable, and has the happy faculty of agreeing with the stomach, where the corresponding Potassium Salt often gives us such trouble. I find effervescing Bromo-Soda very valuable in congestive and some forms of nervous headache, and especially those headaches superinduced by overwork of a mental kind. In fact at times when overworked I have refreshed myself with a little in water.

I use effervescing Bromo-Soda in dessertspoonful, rather than teaspoonful doses, desiring to spare myself the necessity of repeating. I put this quantity in a glass not quite half full of water, order it drank while effervescing, and find it to relieve headache as if by magic.

J. K. Bauduy, M. D., LL. D.,
Professor of Nervous and Mental Diseases,
Missouri Medical College.

◆

HORSFORD'S ACID PHOSPHATE

Is vitalizing in its effect on the nervous system.

Dr. J. Fourness-Brice, of S. S. Teutonic, says: "I have prescribed it in my practice among the passengers travelling to and from Europe, in this steamer, and the result has satisfied me that if taken in time, it will, in a great many cases, prevent seasickness."

Dr. J. C. Wilson, Philadelphia, Pa., says: "I have used it as a general tonic, and in particular in the debility and dyspepsia of overworked men, with satisfactory results."

◆

Alas for the fate of the jester gay,
With eternal envy curst.
Each clever mot that he hears friends say
He wishes he'd thought of first.
In the Spring a young man's fancy
Lightly turns to thoughts of how
He can get the suit he's after,
Without paying for it now.

A section of *Sequoia gigantia* sent from California to the British Museum has had its annual rings counted, and it turns out that the tree was 1330 years old. Yet the diameter of the tree was only fifteen feet.

Every tramp arriving at Elkhart, Ind., is first vaccinated, after which he is given a lunch neatly wrapped in paper by a hotel in that city which charges the city fifteen cents for every lunch prepared. A policeman then escorts the tramp to the corporation line, and he is bidden to move on.

Both are a kind of gymnasts, but there is probably more money in the baseball pitcher than in the ordinary tumbler.

Teacher. "What did Cæsar say when Brutus stabbed him?"

Bright Boy. "Ouch!"

TO THE MEDICAL PROFESSION.

Elixir Salicylic Acid Comp.

PREPARED ONLY BY WM. R. WARNER & CO., PHILADELPHIA, PA.

This preparation combines in a pleasant and permanent form, in each fluid drachm, the following:

℞			
Acid Salicylic (Schering's)	grs. v.	Potass. Iodid.	grs. iss.
Cimicifuga	grs. i ¾	Tr. Gelsemium	gtt. i.

SO PREPARED AS TO AFFORD A PERMANENT, POTENT AND RELIABLE REMEDY IN

RHEUMATISM, GOUT, LUMBAGO, Etc.

This preparation is especially valuable for rheumatic diathesis and in the treatment of acute inflammatory, subacute and chronic rheumatism; any of which will yield to tablespoonful doses; every three or four hours, until four doses are taken; then a dessertspoonful at a time and finally decreased to a teaspoonful every three or four hours.

In acute inflammatory rheumatism, experience has proven that two teaspoonfuls administered every four hours, until a slight ringing in the ears follows, the dose then decreased to a tablespoonful every three or four hours, will produce the desired effects.

The advantages of Elixir Salicylic Acid Comp. are afforded by the combination of Salicyclic Acid with Soda in excess, thus forming a salt less corrosive and irritating and more readily borne by the stomach.

The other ingredients possess advantages well known to the Profession to whom this preparation is alone introduced, we therefore suggest the propriety of specifying "Warner & Co.'s" and ordering in 12-oz. quantities, to obtain original bottles.

It is a matter of great satisfaction to us to be able to place before the Profession a remedy so effectual in the cure of one of our most stubborn classes of disease.

Elixir Salicyclic Acid Comp. is put up in 12-oz. square blue bottles, with prescription label on it, and may be obtained from Druggists everywhere. See that no substitutes are offered.

ESTABLISHED 1823.

ALEX. YOUNG CO., LIMITED,
DISTILLERS OF
Y. P. M. WHISKIES

DISTILLERY, - Nos. 408, 410, 412 and 414 South St.
MALT HOUSE, Nos. 416, 418, 420, 422 and 424 South St.
STORE, - - - - - - No. 700 Passyunk Ave.
PHILADELPHIA, PA.

New York Office, - - - 78 Wall Street.
FOR SALE BY
ACKER, MERRALL & CONDIT and PARK & TILFORD.

AMERICAN ANALYST.

AMERICAN ANALYST.

Published 1st and 15th of each Month.

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ADULTERATION ACTS.

It seems that in England as well as in this country, they are suffering from the want of practical knowledge by the legislators who make adulteration laws. From our British cotemporary *Food and Sanitation*, we learn that a deputation of members of Parliament had an interview with Mr. Shaw Lefevre, respecting adulteration. It says it is fortunate that the deputation has at least one member who had a practical knowledge of the question, in addition to the theorists such as four or more others it names. This one practical man seemed to be the only one who was aware that the question of adulteration is a very much wider one than any of the theorists imagine it to be.

According to the spokesmen of the central and associated Chambers of Agriculture, the only point in adulteration worth taking note of is that of dairy products. This is as we have repeatedly shown, arrant nonsense, and indicates that its utterers know really nothing of the question. They claim to have been impaired heavily by the adulteration of dairy produce but it is safe to say that the agricultural interests have been much more injured and to a much greater extent by the adulterations of beer and spirits, in being deprived of the sale of barley and wheat through the use of substitutes by the brewers and distillers. Again it can be readily shown that the farmer is not the only class who are suffering from the evils of adulteration, as one might be led to think from hearing their constant outcry against what they term adulteration of dairy products. The grocer suffers more and in innumerable forms and above all the general public as the real consumer suffers most. It is only such demagogues as some of our Senators and Congressmen, who in their anxiety for the farmers' vote, endeavor to make the community believe that the one great evil of adulteration is to be found in the manufacture of Oleomargarine as a clean, healthy substitute for butter. Some of these may know better but it serves their purpose better to stultify themselves in the eyes of thinking people by preferably acting on their ignorance. Our contemporary very pointedly adds that if the dairy interest was really the object of benefit at the hands of those British legislators, they would at once suppress the adulteration of milk, which in England alone annually filches over four millions of dollars from the pockets of the consumer. To this we might add that probably one of the main reasons for the legislators not doing so is that such stringent laws against milk adulteration would bear heaviest against the very class they are trying to make believe that they are the objects of their most solicitous paternal protection. It is a well known fact that oleine was largely bought by the dairy farmers to use in their butter. It may be a little hard on the class to speak of the innumerable instances where hay-dealers have found large stones in the centre of hay bales which were already heavily laden with balesticks the size of small trees, until the abuse became so flagrant that hay dealers were compelled to associate and pass rules against this mean swindle. It is also the same class who very carefully salt their oxen they are shipping to the slaughter house so as to compel them to drink large quantities of water and then make a great difference in their weight on the hoof. Such people as these do not deserve much protection and would indeed not be thought of if they as a class were not many voters whose favor the wily politician needs. Such laws also make a place for an army of hungry office seekers as Oleo inspectors, detectives and on dairy commissions.

◆

BUTTER SUBSTITUTES.

When considering the right and wrong of a subject upon which the ordinary man cannot be expected to be fully informed, it is just as well to be guided by practical scientific men who have the necessary experience and sufficient knowledge of the matter to make their opinion reliable and valuable. No one will deny that Professor Chandler is such a man. He, speaking of butter substitutes, says:

"For years the poor of this State have been eating rancid butter. Good butter is obtainable in few places. Those who can afford to pay 40, 50 and 75 cents a pound can secure choice butter made of good cream and in a cleanly manner; but very few in the community can afford such a luxury. The others have had to take the butters mixed or doctored of the butter dealer, which is often dirty and unwholesome.

"Well, then comes the invention of artificial butter. Human beings crave fat, and want something to spread upon their bread. The artificial butter is made of beef suet. Nobody ever said suet was not wholesome. That made oleo-margarine. It was made mechanically, in a clean and appetising manner.

"After this combination had been made for some time another was tried. This was of beef suet and refined cotton-seed oil. The latter is eaten by all of us on salad as olive oil. There is no reason in the world why cotton-seed oil is not just as good as olive oil. Some people seem to think it is not as good, because it came later and is cheaper. That sort of reason does not appeal to me. The cry against artificial butter comes from men who think that they can control the farmers' votes by making it. It is like the ancient British legislators and the wood farmers. If the farmers only knew it, they will suffer nothing by the free admission into the market of artificial butter, for there are other directions in which they can produce equally good results, and they will make good butter instead of bad. There is no reason why their farms will not produce for them as good returns in other lines as by devoting them to the making of bad butter. Those farmers who can produce choice butter need have no fear of competition, and the others had better abandon the dairy business.

"Not a single chemist of standing in the profession has uttered a word against artificial butter. There are a few third-rate chemists employed by the Dairy Commission, who have made statements to the effect that artificial butter is not wholesome. It is easy enough to see why they should do that. All the big chemists of this country and Europe have pronounced in favor of artificial butter. When I was president of the Health Board of this city I investigated oleomargarine and butterine very carefully, and would have stopped their manufacture at once had I not found that they were perfectly wholesome. On the contrary, I found them much better than the poor, cheap butter which was sold in most places, and which became rancid in a very short time. I, also, called the attention of other chemists to the new invention and secured their opinions."

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If each of us knew his own business one-half as well as he knows everybody else's, what a wonderful amount of work would be accomplished in this world every day in the year!

The man who said you couldn't eat your cake and have it too evidently was not a dyspeptic.

HOUSEHOLD.

COLD SLAW.

Chop the cabbage fine with a chopping knife; season with pepper, salt, mustard and sugar. Boil wine vinegar with a small lump of butter, Beat the yolk of an egg and stir in quickly; then pour over the cabbage.

STUFFED CUCUMBER SALAD.

Peel six medium-sized tomatoes, remove the centres and fill with cucumbers cut in pieces and well covered with a dressing made as follows: One and a half teaspoonfuls salt, a salt-spoonful pepper, three tablespoonfuls oil and, lastly, one of vinegar. Set each tomato in the centre of a lettuce leaf and put a spoonful of mayonnaise on top of each one.

SPONGE CAKE.

Five eggs, whites and yolks beaten separately, juice of half a lemon, one goblet full of sugar, one of sifted flour, pinch of salt. Beat well yolks, salt, juice of the lemon and half the sugar, then add the rest of the sugar. Beat again. Beat whites very stiff and add them to mixture. Beat until bubbles rise and break as soon as spoon is taken from it, add flour, mix as lightly as possible. Bake in bread pan in very slow oven. It should take one hour Put greased paper in pan and a paper over for awhile.

STRAWBERRY PUFF PUDDING.

Stir two teaspoonfuls baking powder in a pint of flour, add milk, stirring all the time until it makes a stiff batter, a pinch of salt. Have ready six well buttered cups, a quart of strawberries that have been hulled and a cup sugar. Put a spoonful batter in each cup, then a thick layer of berries, then two teaspoonfuls sugar and finally another thin layer of batter. Repeat this until the batter has been all used. The cups should not be more than two-thirds full. Set in a steamer over boiling water and steam half an hour. Serve at once with sauce.

BAVAROIS AUX PAISES.

Press through a sieve enough strawberries to obtain a pint of pulp, mix with ten ounces powdered sugar flavored with vanilla, one and a half ounces of clarified gelatine dissolved in two gills of water. Stir on ice until it begins to congeal, add enough whipped cream to fill a three pint mould, imbed in ice, cool thoroughly.

FROZEN ORANGES.

Remove the peel and slice the oranges: to each pound of oranges add three-quarters of a pound of sugar and one-half pint of water, then freeze.

PINEAPPLE ICE.

Grate the pineapple. Allow one pound of sugar to two of fruit, add one pint of water and freeze.

How to Cook Cucumbers.—Cucumbers are very wholesome, as well as tasty. As a rule, they are hardly ever seen on the table except in vinegar, but they are delicious stewed in milk, having been previously peeled and cut in slices, and eaten hot. Another way is to peel them, remove the bitter ends, and then scoop out the seeds with a teaspoon. Mix these seeds with a quarter of a pound of lean cold ham and the same quantity of cold mutton, both finely minced, and to these add a small minced onion, a little chopped parsley, one dessertspoonful of chutney, and a seasoning of pepper and salt. Insert this mince in the cucumbers; then place them in some good gravy in a baking dish, and bake them for about half an hour in a moderately-heated oven. Serve hot.

Egyptian Chambermaids.—They seem to employ remarkable chamber-"maids" at a famous Egyptian hotel much resorted to by English and American visitors. According to one of the latter—a lady—the attendant at her room, who performed all the duties of the calling, even to making the beds, was a Frenchman, dressed as if for a dinner party, with white waistcoat and swallow-tail, and having the air of an educated gentleman. Naturally, the lady found it somewhat embarrassing to accept his services. Another lady, who, on arriving at the house, rang for the chambermaid, was waited on by this superb creature, whom she naturally took for the proprietor or manager. "I wish to see the chambermaid," said the lady. "Madame," replied he, in his best English, "madame, she am I!"

THE COOKING OF VEGETABLES.

BY KATHERINE ARMSTRONG.

The large markets within easy reach of those who live in the city supply most kinds of fresh vegetables the year round; if not raised near home, they are brought from the sunny South. To cook vegetables well is a matter of more importance than it is generally considered. The homely turnip and cabbage, and the much-abused onion even, can be made very acceptable by proper treatment. And another thing to be considered—they are within the reach of those who are compelled to consider the cost of their vegetables. A good deal of nutrition, and healthful nutrition too, can be had for little money. Of course it is always best to lay in a season's stock of vegetables when possible to do so.

The yellow French turnips are very good, when properly cooked; enough for a large family would hardly cost a dime. They should be pared, cut in small pieces, and have a full hour to boil slowly; should be put in boiling water, or rather boiling water should be poured upon them. When about half done, the water should be changed; this is to overcome the peculiar strong taste of the turnip. In this second water also put one teaspoonful of sugar and the same of salt. When all cooked thoroughly, pour off the water and allow to dry off a few moments on the side of the range. No vegetable of this sort is well cooked when it is at all watery—the drier it is, the better it is. All needful moisture is to be added when it is mashed, of which there should be a generous allowance, and also a little pepper. It should be tasted, and more salt added if necessary. Then it should be neatly dished, and look as if some care was used, not look as if it was dumped in haste and at random into the dish. It "makes all the difference in the world." It tastes better if it looks tasteful and inviting. Even yellow turnips can be made to look and to taste exceedingly well, and there are few more wholesome vegetables. Then there is the white turnip, which can be made delicious in this way: Pare and slice about half an inch thick, and cut in dice, quite evenly, as the shape is retained when cooked. This also requires an hour to cook, and to have the water changed. When perfectly soft, pour off the water, and pour over milk or cream to cover. When it comes to a boil, stir in one spoonful of flour blended in a little cold milk. Add also salt and a little butter; if milk is used, it should be of the consistency of thick cream. An egg stirred in when it is removed from the fire makes it very nice. Flour is preferable to corn-starch for thickening in almost all cases. Some consider corn-starch richer, but it is pasty in its effects, and not so agreeable to use as flour.

Cabbage can be cooked to be as acceptable as many of the more delicate vegetables, and its odor, so objectionable, can be entirely overcome by the simplest precautions. First look well to the range and see that the draughts are open that are built for the very purpose of carrying off ill odors. How often, indeed almost invariably, this matter is neglected, and then the poor cabbage is blamed the more for it! Then into the boiling water in which you are to cook the cabbage put a clean piece of charcoal, about the size of an egg. Also put half a teaspoonful of carbonate of soda; then put in the cabbage, which has been quartered and well looked over, and lain half an hour in cold water. Cook uncovered, and the odor will not be found objectionable. It requires a full hour to cook. Now pour into a colander and drain thoroughly; then chop, add butter, salt, and pepper. This is the common way, but a much newer one is to break the cabbage but a little, add milk to cover, return it to the fire and thicken it a little, adding butter, salt, and pepper. It retains but little of its strong flavor, and would almost be considered equal to celery done in the same manner, which is certainly one of the daintiest of vegetables.

The poor onion, especially the "silver skins," can be made almost unobjectionable cooked in the same way, only changing the water several times in cooking, seasoning and buttering liberally.—*Christian Union.*

HOW TO TEST A WATERMELON.

I draw my thumb nail over the melon, scraping off the thin green skin. If the edges of the skin on each side of the scar are left ragged or granulated, and the rind under the scar is smooth, firm, and white, and has something of a glassy appearance, the melon is ripe. But if the edges of the scar are smooth and even, and the thumb nail has dug into the rind in places, and the skin does not come off clean, then the melon is green. You can easily learn on two melons, one ripe, the other green, noting the difference after they have been cut open.—*Southern Farmer.*

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In an interesting article on menus, a writer in the *Globe* enumerates some of the various eccentric forms which they have recently taken—these including lobsters, cos-lettuce, French rolls, shells, cigars, cigarettes, match boxes, fans, parchment document with seals and ribbons, newspapers, maps, postcards, envelopes, and bank notes. They have been printed upon silk, papier-mache, wood shavings, ivory, parchment and rice paper. Menus have, of course, been written in every known language, and some unknown ones—notably, that fearful and wonderful combination of y's and ff's and e's, sometimes supposed to represent Early English spelling, But of all the amazing complications to which hungry mankind has been subjected, perhaps what we may fairly describe in this connection as taking the cake was the menu of the banquet served to the members of the Oriental Congress during their visit to Stockholm. "It made a volume of eighteen pages, handsomely bound, and contained discourses on the several dishes in sixteen Oriental languages, by as many eminent scholars!"

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A very interesting question—"Do we drink better or worse wine than our forefathers"—has just been raised in a thoughtful essay by Sir Herbert Maxwell, who declares that though there is more good wine made at present than at any previous period in the world's history, yet relatively to those who can afford it there is many times less. The supply is excellent, but the management is too often bad. Liberal but un-instructed persons will use wine of high price and good vintage, without stint, before it has reached maturity—in fact, three-fourths of the best wine is probably consumed before coming to perfection. On the other hand, as Sir Herbert points out, some hosts seem to think that all old wine must be good, and inflict on their guests Maderia "which has been twice round the Cape, and is worth now a guinea a glass," but which in reality has faded into an acid liquor which it is hard to believe ever flowed from the veins of the vine, whilst a bottle of rare "'20 port" may turn out to suggest nothing so much as a mixture of Harvey's sauce and treacle.

Public attention is being called to a new industrial application of saccharin, the sweet substance derivable from coal-tar products, in the trade of fruit preserving. The bottling of fruit has always been attended with difficulty, because of the danger of fermentation. Ordinary bottled fruit, moreover, loses much of its flavor owing to the high temperature to which it has to be subjected to kill the organisms of fermentation and putrefaction. It is now claimed that the use of saccharin obviates these disadvantages, whilst the product obtained is declared by experts to be superior to any other preserved fruit hitherto produced. The new process, it should be noted, is not restricted to the manufacturer, but may be carried out by a housewife, as it demands the employment neither of skilled labor nor complicated machinery.

An English paper calls attention to a feeding-bottle (i.e., nursing bottle) advertisement which concludes with the words: "When the baby is done drinking, it must be unscrewed and laid in a cool place under a tap." "If the baby does not thrive on fresh milk, it should be boiled." This, it is remarked, is a trifle hard on the baby.

Cement for Porcelain.—20.0 white lead and 12.0 pipe clap, carefully dried, are incorporated with 10.0 boiled linseed oil heated on a water bath. The cemented articles are slowly dried in a warm place.

Longevity, with a list of persons known to have lived one hundred years or more, by Archer Atkinson, M. D., of Baltimore, Md.

This little paper should be read by all students of medicine and students of National History. It contains a list of over 250 persons who have reached the age of 100 years and some even have passed that period. It is curious how any man could have culled out such a list. It may come into use some day, in some unsuspected way. Copies, 25 cents.

Gabble—"No, my cold doesn't seem to be getting any better. I have got so now that I can hardly speak."

Stillman—"Some people would call that a great improvement."

Slightly Ambiguous: Dabble—"How do you like the *Aurora* since I took charge of it?"

Dibble—"It is just such a paper as I should expect you to get out?"

An exchange says that man's full mental power is not reached before the age of twenty-five. The writer evidently has never mingled with the members of the freshman class of any of our colleges.

To prevent a shiny skin, use a little camphor in the wash-water. Never use face powders; they are delusions.

MEDICAL.

ON THE ACTION OF ALUM UPON THE NERVOUS SYSTEM.

The modern development of chemistry has undoubtedly been of the greatest possible service in arts, manufactures, and in medicine, but, like all good things, it is not without its disadvantages, and sometimes it may lead to evil, the cause of which may remain long unsuspected. It is possible that this may be the the case with some of the nervous diseases whose causation is frequently attributed to hurry, worry, and nervous strain, due to an advancing civilization. There is no doubt that the introduction of the penny post, railways, and telegrams has very greatly increased the strain upon the nervous system, but still we can hardly attribute to them some of the obscure nervous diseases from which some people suffer, while a very large number more who are subject to the same strain remain uninjured. The number of the factors which may be concerned in producing nervous disease has hitherto rendered it impossible to trace these diseases to their exact source. Of late years there has been a tendency to recognize a likeness between the symptoms of certain nervous diseases and those produced by poisons; and, as Dr. Sidney Martin showed very clearly in his Goulstonian lectures, the paralysis which follows diphtheria is not due to the microbe of the desease, but to poison produced by it which will cause nervous degeneration and loss of power when separated from the microbe and injected into an animal. The poison produced by the diphtheria bacillus appears to belong to the class of toxalbumins, but in his researches on anthrax poison Dr. Martin showed that from the anthrax virus an alkaloidal substance could be separated which had a lethal action like that of the ordinary virus itself.

In the Croonian lectures for 1889, Dr. Lauder Brunton pointed out the likeness between the symptoms of disseminated sclerosis and locomotor ataxy in man and those produced in frogs by poisons belonging to the benzine series, and such observations indicate the possibility of certain nervous diseases being caused by the absorption of poisonous products of albuminous decomposition in the intestines. Certain inoganic substances are well known to cause nervous disease, examples of which are lead palsy and mercurial tremor, affections which are readily traced to the poisons producing them. Hitherto, however, no attention has been directed to alum as a possible cause of nervous disease, and yet the symptoms it produces on the nervous system after its absoption into the blood are very remarkable indeed. They were apparently first noticed by Orfila, who found that when alum was given to a dog, and vomiting prevented by ligature of the gullet, death occurred, with symptoms of weakness and diminished sensibility, so that it was almost impossible for the animal to stand upright, and pinching or pricking caused no movement.

The most complete series of experiments on the action of aluminum salts were made under the direction of Professor Hans Mayer by Paul Siem. These experiments showed that when administered to animals (dogs, cats, and rabbits) by subcutaneous injection, a soluble salt of alum causes no symptoms at all for three of four days. Then the animal suffers from a loss of appetite and obstinate constipation, emaciation, languor, disinclination to move. Next there is vomiting and loss of sensibility, as a deep prick with a needle is scarcely felt. When forced to move the leg is raised, but trembles and twitches violently, and is with difficulty placed on the ground. Sometimes there is general tremor or convulsive twitching, and sometimes there is extreme weakness or partial paralysis of the posterior extremities. There is complete loss of sensibility to pain, while the animal retains its senses. Then the power of moving the tongue and of swallowing is completely lost; even the saliva cannot be swallowed. The symptons are precisely those which are observed in a disease occurring in man, and known under the name of acute bulbar paralysis. The cause of this disease in man is at present unknown, and the idea of its possible connection with the continued absorption of alum in the same way that lead palsy or mercuria tremor may be due to the absorption of lead or mercury is quite a new one. Much observation may be necessary in order to ascertain whether such a connection exists or not, but the disease is so dreadful and its treatment so hopeless that it is worth while for the physicians generally to try whether such a casual connection between the use of alumina and the appearance of the disease can be traced. It is probable that many medical men are unaware of the extent to which salts of alumina may be introduced into the body, because they are under the impression that the use of alum in bread is forbidden by law, and that, as this element hardly exists to any extent in any portable waters, they may consider that its introduction into the body is impossible.—*British Medical Journal.*

WHOLE-MEAL BREAD.

A section of the medical profession have of late years condemned the use of whole-meal bread in any form, as favoring the degeneration of the arteries. Arteries are the vessels which convey the pure blood from the heart to all parts of the body. They are highly elastic tubes, and it is by their elasticity that they are able to expand to receive the contents of the heart. The maintenance of the normal circulation of the blood largely depends on the arteries retaining their elasticity, so that anything which lowers the elasticity of the arterial walls is decidedly injurious. It is well known that as old age advances the arteries become more rigid, owing to the deposit of earthy matter (lime) in the walls, and the circulation is materially modified. Whole-meal bread is popularly supposed to be rich in lime, and, therefore, presumably is favorable to the "atheromatous" degeneration of the arteries, as the condition is named. The same objection has also been urged against rice.

The doctors who make the objections to whole-meal bread on this account cannot ever have examined whole-meal bread for lime. As a matter of fact whole-meal bread is very deficient in lime. One pound of whole-meal bread (7,000 grains) only contains 3½ grains of lime, and experiments have proved that the best wheats do not contain sufficient lime to support life. The mineral matter of wheat consists almost entirely of phosphates, the large proportion of which are alkaline. In 100 parts of phosphates from wheat are found:

72.54	parts of	alkaline	phosphates
20.08	"	" magnesium	"
4.99	"	" calcium	"
2.39	"	" other	"

so that wheat is decidedly poor in lime. Rice also is very deficient in lime. Whatever may be the effect of other vegetable foods, wheat is certainly not to be feared on account of a probable development of "atheromatous" degeneration of arteries.—*London Caterer.*

DIGESTION OF LIVING TISSUE.

Numerous experiments have been carried out in the past with a view to answering the oft-propounded question, "Why does not the stomach digest itself during life?" It is well known that the ear of a living rabbit, or the leg of a living frog, introduced through a gastric fistular into the stomach of a dog, will be digested. These facts have led to the conclusion that living tissues are, as a rule, unable to resist the action of the gastric juice. There are some reasons, however, for believing that in each of these cases the tissue undergoes some change—a local death, it may be—prior to its digestion.

Recently, some experiments have been published which are interesting as bearing upon this subject, though they do not afford any answer to the question originally proposed. It has been shown by Viola and Gaspordi that very vascular tissues resist digestion for a long time, provided the circulation is maintained intact. In dogs and cats, these investigators found that after introducing the spleen into the stomach, the former would resist digestion for twelve to sixty-four hours. This was as long a period as the animals operated upon could be kept alive. They succumbed to acute peritonitis and became incapable of carrying on their digestive functions properly.

Recognising in this fact a serious objection, M. Ch. Contejean has modified the preceding experiments by introducing a loop of intestine in such a way as to allow of successful sutures, and prevent the permeation of intestinal fluid into the peritoneal cavity. The operation was performed upon a dog as follows: an incision of a finger's length was made into the stomach in the region of the fundas, parallel to the attachment of the great omentum, and for an equal distance across this organ. Through this opening the terminal portion of the duodenum was introduced into the stomach, the insertion of the mesentery alone being left outside. The intestine was fixed in this position by a Czerny suture Seventy to eighty stitches were taken. The stomach wound, along the *linea alba*, was closed by a suture at three places.

The day after the operation the animal received neither food nor drink. On the following day and those succeeding the usual rations were given twice each day. The wound healed by first intention. The dog was killed at the end of eleven days, having digested nineteen abundant meals since the beginning of the experiment. Post-mortem examination showed no perforation whatsoever of the intra-gastric intestinal hernia; the portion bathed by the gastric juice, however, was the seat of marked desquamation, and it seemed to show an incipient ulceration over a very limited area. The adhesion between the stomach and intestine was very firm, and the sutures were well encysted.

The above experiment then shows that living tissues not covered by any special epithelium have the power, under certain conditions, to resist the action of the gastric juice for a very long period.—*Dietetic and Hygienic Gazette.*

An Ointment 3,000 years old. Among the Egyptian curiosities contained in the famous museum of the Duke of Northumberland, at Alnwick is a jar of ointment which is upward of 3,000 years old. Notwithstanding this extreme antiquity the ointment retains a powerful smell. This result, obtained as it was in pre-antiseptic days, says a good deal for the thoroughness of the empirical methods in vogue amongst the early Egyptians. How much of the modern therapeutic output in the ointments would stand such a test as the above?—*Medical Press and Circular.*

APPLES AS MEDICINE.

The remedial use of apples is worthy of notice, says the *North American Practitioner.* The German analysts say that the apple contains a larger percentage of phosphorus than any other fruit or vegetable. The phosphorus is admirably adapted for renewing the essential nervous matter—lecithin—of the brain and spinal cord. It is, perhaps, for the same reason, rudely understood, that old Scandinavian traditions represented the apple as the fruit of the gods, who, when they felt themselves to be growing feeble and infirm, resorted to this fruit, renewing their powers of mind and body. Also, the acids of the apple are of singular use for men of sedentary habits, whose livers are sluggish in action, those acids serving to eliminate from the body noxious matters which, if retained, would make the brain heavy and dull or bring about jaundice or skin eruptions and other allied troubles.

WARTS.

The *Indiana Pharmacist* answers a correspondent as follows:—

"Can you give some remedy for the removal of warts? I have tried everything recommended. Three of my customers are troubled with them and I have a persistent one on my thumb that nothing seems to faze."

Warts are very peculiar growths. Why they come or how they go no man can say. The writer had his hands covered with warts when a small boy. All sorts of remedies were tried without avail. His father was a physician and used acids, nitrate of silver, and all sorts of washes and lotions but the warts seemed to increase and multiply. One day an old Englishman, who had a reputation of doing occult things, was consulted about them. He carefully counted and touched each and said they would go away. We do not remember how long they remained, but certainly in a short time they were gone and we have not had a wart since.

We have known of many instances where castor oil was applied, one drop every day, well worked into the wart and a cure resulted. There are other cases where gently rubbing them every day for ten minutes, has caused them to disappear in a few weeks.

The use of epsom salts causes them to vacate the premises promptly. Give the salts in doses of ten grains, in a glass of water, every morning before breakfast. This will not only cure the warts, but will also clear up the complexion, making the skin soft, smooth and clear as an infants.

ADULTERATION.

DISHONEST CANNING.

The complete success of canning fruit, as to the mere matter of preserving it from molding and decaying, requires that the contents of the can shall be heated through to a temperature at least nearly as high as boiling water; to do this takes time and care. If a little salicylic acid is added to the contents of the can it will assist the action of heat in killing all germs, and the heating need not be quite so thorough. But such an addition is not honest. The use of salicylic acid in wine has been prohibited in Europe, because, while small quantities added may do no harm, there is no guarantee that it may not be used to excess. It is not harmless when taken into the system. Fruit properly canned without it will keep perfectly; fruit improperly canned, or poor fruit canned in any way, may keep with its aid, and not without; and the more careless and slovenly the selection and preparation of the fruit, and heating and sealing of it, the more freely must the preservative be added, to keep it from decay. Salicylic acid is widely used in this country in canning vegetables and tomatoes; probably it is used in canning fruits. Then we have two kinds of tin-plate—the "bright" and the "terne." The latter contains much more than the former. In Germany the law requires that tin-plate used for canning foods shall not contain over 1 per cent of lead. In the chemical labortory of the Department of Agriculture at Washington, the tin of fifty cans, in which peas had been put up, was examined for lead; thirty of these were found to contain from ½ up to 13 per cent of this poisonous metal. Then again, solder, rich in lead, is easier to handle than if poor in lead. In Germany canners are prohibited from using solder with more than 10 per cent of lead in it. The solder of twenty-four cans, examined in the laboratory above mentioned, was found to contain from 43 to 65 per cent of lead. There is no question but that the use of lead, or of materials containing much lead, that are to come in contact with articles of food, and especially of acid food, is to be strongly condemned. It is possible that the poorer the quality of the materials coming in contact with alloys rich in lead, the greater the danger of getting some of the lead, and of the tin also, into the contents of the cans.—*Professor Caldwell of Cornell.*

ADULTERATED MILK.

At Southampten Borough Bench on April 24th, Charlotte Light was charged with selling milk with 20 per cent. of cream extracted therefrom. The Town Clerk (Mr. G. B. Nalder) said the defendant carried on business at 17 Northam street, and the borough analyst's certificate showed there 20 per cent. of cream was extracted. William George Powell, the inspector under the Food and Drugs Act, deposed to purchasing milk at Mrs. Light's shop. Mrs. Light told him she sold the milk in the same state as she bought it from the original vendor. A woman named Annie Eastman, who worked on the establishment, appeared for the defendant, and said she knew that nothing was done to the milk after it was received. The defendant was an old woman, and was unable to walk much, and therefore could not be present in the court that day. She had carried on the business for 43 years. A fine of 10s. and costs was imposed.

ADULTERATED SUGAR.

At Swindon Petty Sessions on April 26th, Edward Kempster, grocer, of Purton, was summoned for selling ½lb. of Demerara sugar containing 100 per cent. of dyed sugar. Mr. H. Bevir prosecuted on behalf of the Wilts County Council; Mr. W. H. Kinneir appeared for the defense, and pleaded guilty. Mr. Bevir said there was no charge of fraud or bad faith against Mr. Kempster, but Demerara sugar was a well-known article of commerce, and it had certain property which the substance supplied to the inspector did not contain. The dyed crystal which took the place of the Demerara sugar was a considerably cheaper commodity, and the analysis showed that the article was really not Demerara at all, but dyed yellow crystals. Mr.

Kinneir, on behalf of Mr. Kempster, said that on the day on which the inspector's assistant called at the shop, Mr. Kempster had gone to Cricklade market and his son was serving in the shop. The son knew both the inspector and his assistant throughly well. In the shop was one drawer for Demerara sugar and one drawer for yellow sugar. Unfortunately the Demerara drawer became empty, and the shop assistant filled it with yellow sugar, which was served to inspector's assistant by Mr. Kempster's son, believing it to be Demerara. Mr. Kempster was well-known as a respectable and a thoroughly honest tradesman, and he much regretted that his son should have sold the wrong sugar inadvertently. The magistrates felt bound, seeing that the Act was for the protection of the public, to convict, but imposed the small penalty of 1s. and 16s. 6d. costs.

DANGEROUS CANNED TOMATOES.

It is perhaps little known that there has recently been introduced to and used by the manufacturers of canned goods and preserves a substance for coloring tomatoes. In tomatoes of impaired quality of color a single drop of the preparation will considerably repair this defect, and even in standard goods it is said that a marked change for the better takes place. The coloring matter is one of the most extensively used of the so-called aniline colors, eosin. It is prepared and put up in bottles bearing a label "tomato-color."

Only very minute quantities are necessary for the purpose sought, and it is hardly supposable that sufficient would ever be added to render the food prejudicial to health. Its physiological action has not, we believe, been studied. The practice, however, is to be deplored, since it is a deceptive one, and no advantage can accrue from it to the consumer. On the contrary, there are possible disadvantages. To persons afflicted with chronic disease it is not possible to state what aggravation it might cause, since nothing as yet is known as to the physiological effects of eosine. As a warning, however, we have for an example the now extensive use of salicylic acid and an antiseptic in food preserves. Medical science has proved this to be injurious, particularly in kidney disease, and its use is now universally condemned.

The use of eosine, or more exactly bromeosine, the compound used, is more particularly to be condemned, however, for its deceptive properties. There is no property it possesses that can be of advantage to the consumer, while injurious or inferior foods may be thrust upon him at the prices of more perfect ones.

There are chemical means, quite simple, of detecting its presence in preserved tomatoes, and the fraud is thus made an easy matter of discovery. The method in simplified form is as follows:

Strain off the solid matter and to the juice add a few drops of pure hydrochloric acid (muriatic acid) and shake this with ether. Draw off the ether which will contain the coloring matter, and agitate this with a dilute solution of caustic soda. The soda solution will contain the bromeosin, and will have a reddish-yellow color with a fluorescent appearance. Some of the natural coloring matter of the tomatoes will also be extracted, and, unless the fluorescence is apparent, it will be necessary to further remove this by acidfying the soda solution and repeating the operation by extracting with ether, and shaking with dilute caustic soda solution, when the fluorescence will appear. If doubtful results are obtained, it would be advisable to submit a sample for professional exrmination.—*Journæl of Commerce.*

COFFEE-SHOP DRINKS.

At Lambeth Vestry Mr. Victor Roger asked whether it would be within the province of the Sewers and Sanitary Committee to take samples of the liquids sold in coffee-shops, such as tea and coffee? As they looked after the publicans, he thought they ought, also, to look after the coffee-shop keepers. Mr. Dann, chairman of the committee, said he would see what could be done. The inspectors would no doubt attend to the matter.

INVENTIONS, SCIENCE, ETC.

THE COAL-TAR COLORS IN THEIR SANITARY RELATIONS.

BY HENRY LEFFMANN, M. D., PROFESSOR OF CHEMISTRY AND TOXICOLOGY IN THE WOMAN'S MEDICAL COLLEGE OF PENNSYLVANIA.

From Pharmaceutical Era.

Nothing illustrates more vividly the value of painstaking investigation than the history of the utilization of coal-tar. Originally a refuse product of most objectionable character, the disposal of which was one of the most difficult tasks in gas engineering, it has become of the greatest importance, and even if the operation of distilling coal for gas should cease, the manufacture of tar and other accessory products of gasmaking would continue. Vast industries, involving millions of capital and employing an army of skilled and unskilled workmen, have been founded on the use of the derivatives of this product. The chemistry of coal-tar demonstrates the great value of abstract reasoning. A large part of the substantial progress in this field has been due to close attention to the theories of structure and to ingenious suggestions as to molecular arrangement.

Most persons know little else about coal-tar except that colors are made from it, and the general information is quite vague, a not uncommon opinion being that the colors are extracted from the crude product—that is, pre-exist in it. In reality, a long line of transformations is needed to secure the products now commercially known.

The most important ingredient of coal-tar is benzene C_6H_6. This must not be confounded with the coal-oil product, benzin or benzine, which is a mixture of several hydrocarbons of a type entirely different from benzene. Benzene may be obtained perfectly pure, and is then a colorless, limpid, volatile liquid, with a characteristic "coal-gas" odor. It burns readily, giving much smoke. It solidifies by moderate cold. The pure article is not used for making colors; indeed, for many such operations it is inapplicable and the crude forms are needed.

The crude benzene is converted by the action of nitric acid into nitro-derivatives, and these by further action are converted into bodies containing the groupe NH2, and called amido-derivatives. Benzene itself, by these transformations, yields aniline (amido-benzene) $C_6H_5NH_2$; the associated hydrocarbons yield analogous bodies. From the mixtures of these amido-compounds many brilliant colors may be obtained, and although the progress of invention and discovery has brought about the use of colors not derived from anilin or its immediate congeners, yet the coal-tar dyes are still collectively known in general literature as "anilin colors."

Theory would lead us to expect that all such derivitives would be poisonous. Both nitro-benzene and anilin are highly poisonous, but fortunately most of their commercial derivatives are without marked toxic action. Much misunderstanding has long existed on this point. In some cases the poisonous character has been gratuitously assumed, but in others an injurious action has actually been noted and afterwards found due to impurities. This latter was the case with anilin red (magenta or fuchsin). There is no longer any reason to regard this color as poisonous. It was, however, at first, and probably even now, made by the use of arsenic acid, and an appreciable amount of some arsenical body remained in it, conferring high toxic powers. When freed from this impurity, or prepared by non-arsenical methods, it is harmless. In one class of colors supposed to be the cause of skin irritation with those working in them, it was found that the strong bleaching agents used for cleansing the skin were the cause of the trouble. One point in favor of the anilin colors is that they are mostly so high in coloring power that they are not likely to be swallowed unawares, and need only be used in food and drink in very small amounts. Thus, I am informed by a manufacturing confectioner, who exercises great care in the selection of the colors he uses, that a yellow color, "auramin," has such power that one ounce will color two thousand pounds of candy. Obviously, a body would have to be highly toxic to be felt in such dilution. Moreover, the pure coal-tar colors are not likely to be cumulative, that is, repeated small doses are not likely to give rise to chronic poisoning, since, being complex organic molecules, they are easily broken up in the system and excreted.

Dangerous effects of the artificial colors made arise in three ways:

1. Actual toxic action of the color.
2. Presence of poisonous impurities, either (a) from use of such substances during manufacture, or (b) from liability to adulteration.
3. Employment of the color to conceal substitution or adulteration of food products.

As to the first class, I have already said that few of these colors are decidedly toxic, even when pure. Some of the yellows are dangerous, especially those containing the group No. 2 (nitro compounds) among which is to be noted Martius' yellow—di-nitro-alpha-naphthol. This is a cheap and useful yellow, and there is a constant liability to employ it. Picric acid and anilin orange (di-nitro-cresol) are also poisonous. The latter is also known as "saffron substitute." Weyl, to whom we owe the most exact and extended information on these questions, gives the following as poisonous colors, in addition to those noted above: Methylene blue, safranin, orange II., and metonil yellow. Fast brown G. and Bismarck brown have slight irritant action, but can scarcely be regarded as poisonous. Many colors have not yet been tried, still the proportion of dangerous ones is certainly small.

Concerning the liability of coal-tar colors to contain poisonous impurities, it may be said that there is some cause for anxiety. Arsenical compounds are, of course, the most dangerous of all, and anilin red, which is still a popular color, is often made by the use of arsenic acid. Some coal-tar colors are found in the market in combination with metallic chlorids, such as zinc chlorid. Others again have impurities derived apparently from the vessels in which they are made; thus, I have rarely failed fo find slight amounts of copper in Bismarck brown, also zinc in small quantities in other colors. It is advisable, therefore, that all colors intended to be used in food (and such use in candies at least is legitimate) should be tested for metallic impurities. An unfortunate circumstance in regard to the coal tar products is that the names, being mostly fanciful, are no guide to composition, nor even identity. A change may be made in the nature of the color, or a substitution of a cheaper color occur, and if no visible change is produced the substitute may be constantly sold for the original. In this way the low-priced Martius' yellow, which is poisonous, is said to be substituted for naphthol yellow S., which is non-poisonous.

The presence of arsenic, antimony or mercury in a color may be easily ascertained by Reinsch's test; the presence of copper, lead, zinc or tin, by burning off the color in a porcelain crucible and testing the results according to the usual system of qualitative analysis.

Much attention has been given to supposed irritant effects of coal-tar colors on the skin. I have seen very little evidence of this. I have long been of the opinion that much of the skin irritation ascribed to dye-stuffs is due to the use of irritating soaps.

The third class of injurious effects of the coal-tar colors, namely, the fact that they enable impure, weak or substitute foods to be imposed upon the public, is, of course, an indirect influence, but it is not unworthy of attention. A yellow color, harmless in itself, may be used to avoid the use of eggs, or, by its means, a watered milk may be made to appear rich. A plain fat may be given the appearance of butter; a mixture of corn starch and a little anilin red may make an apparently rich pudding. The coloring of wines and similar beverages is well known. Raspberry syrup quite innocent of the luscious fruit may be easily prepared by the use of the same color. But little legislation is yet in force in the United States on this phrase of adulteration. It will be well to state that as far as butter and milk colors are concerned, and they are largely used, annatto, which is a natural vegetable color, is mostly employed.

The fact that colors nominally the same are often not exactly identical by reason of the slight differences in the crude products from which they are prepared, has been noted above. Moreover, many colors are obtained by secret or patented processes, and hence the exclusive products of certain houses. Initials denoting the place of manufacture are often attached to such colors. Among those of common occurrence are:

M., L. & B—Meister, Lucius & Bruning.
B., S. & S.—Brook, Simpson & Spiller.
B. A. S. F.—Badische Anilin & Soda Fabrik.

Initials are also used to indicate differences in shade and modification composition. There seems to be no great unanimity in method in this respect. The hostile feelings existing between the French and Germans have tended to prevent a common system. Different shades of the same color are indicated by the initial of the tint by which the color is influenced. A red color, for instance, may be produced with varying shades of blue, and these will be indicated by B., BB., 3B., etc., according to the degree. Similarly, "Eosin J." means a yellow shade of eosin (Fr. jaune, yellow). Tropaeolin OOO. indicates a strongly orange shade of the color.

Chemical change may also be indicated by letters. Naphthol yellow, by treatment with sulfuric acid, becomes changed by taking the molecule HSO_3, and this is technically called "sulfonation." The modified color so produced is called naphthol yellow S. It is worthy of note that sulfonation seems to diminish the poisonous action of a color, although rendering it more soluble.

It has been noted that, although comprehensively called "anilin" colors, many coal-tar dyes are not derived from this body, but from other ingredients of the tar. Among these are prominently naphthalene and anthracene, which yield many very valuable derivatives. The same principles, however, as to nomenclature, effects and uses apply to these as to the true anilins. The introduction of new colors goes on with great rapidity. Dealers may give no notice of such substitution, and thus harm may be done, for it is very rare, if ever, that a manufacturer ascertains the effects of his product on the animal system.

A WATER LABORATORY.

One of the latest official acts of Sir Charles Russell as Attorney General was to sanction the sum of £25,000, the residue of a legacy of the late Mr. Richard Berridge, being given, in trust, to the British Institute of Preventive Medicine for the endowment of a laboratory devoted to the bacteriological and chemical examination of our water supplies, with special reference to the discovery of the best means of preventing the transmission of disease through water. A large laboratory is now in course of erection for this purpose on the site secured by the institute at Chelsea.

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There are poisons sold by the Haytiens which are said to be most curious in their effects. There is one, for instance, which is said to produce a great swelling of the entire body. The victim then becomes greatly emaciated, and, it is said, rarely recovers. There is another which is said to produce immediate death. A mild idiocy is said to be the result of another. Another produces violent madness. "I have heard of another drug extracted by natives," said Mr. Durham, "which causes catalepsy so complete as to appear to be death itself for two or three days. There is a plant which is dreaded by herders for the reason that when eaten by an animal it produces complete paralysis of the hind half of the body. The cure said to be produced by the native physician are curious and some of them very remarkable."—*Alumni Rep.*

HYGIENIC.

DISINFECTANTS.

BY C. A. LINDSLEY, M. D., SECRETARY OF STATE BOARD OF HEALTH, CONNECTICUT.

I will conclude with a few words on disinfection.

If there is any one duty of *health officers* more important than another in controlling the spread of infectious diseases, that duty is the securing thorough disinfection. If there is any work more *useless* than another in preventing the spread of disease it is careless, half-way disinfection. The parallel is, a water tank with two holes in it: to stop only one of them does no good; both holes must be stopped to make it hold water.

There should be no shirking of responsibility about disinfection. It is the duty of the health officer to see that it is effectually done.

Disinfection is not a simple and easy thing to do. It cannot be successfully accomplished by "carefully advising the family." To thoroughly "disinfect the person, clothing, bedding, linen, furniture, house and premises" is an undertaking that not one physician in ten could do, even if he would. It is more out of the line of his professional work than doing the offices of the nurse. He has no time to give the needful personal attention to do this work to do it well. He is not paid for such work, and the patient will not pay him for it. Much of the work of disinfection is of the character of house-cleaning and laundry work, such as house servants do, but requiring more careful supervision. The most of it and far the most important part of it is to be done after the recovery or death of the patient, and when the professional services of the physician are no longer wanted. It is quite absurd, therefore, to enact an ordinance as some towns have done, making physicians liable to a penalty for not doing what it is impossible for them to do.

It is a gross injustice to the public to make public safety depend upon means which are known to be so defective and inadequate.

Disinfection is the one thing which controls the spread of infectious diseases. If disinfection is neglected all other efforts are defeated. Infectious diseases can only spread by infection. Destroy the infection, and further extension is impossible. Disinfection most unquestionably should be made the duty of the health officers.

Every case of infectious disease in all its relations to the public safety should be under the constant supervision of the health authorities, from the first time they receive notification of it, until it ceases to be contagious, and until everything which has been infected by it has been disinfected.

In contrast with the slipshod, half-way methods too often practiced in Connecticut, the Secretary begs leave to call attention to the practice in Berlin and Hamburg during the recent prevalence of cholera there, as given in a report by Dr. A. Seibert.

"A squad of four trained disinfectors arrived shortly after the removal of the patient. Their overall uniforms and necessary implements are taken to a house on a cart. They first select a room adjoining the infected apartment, where they don their uniforms, consisting of long linen gowns closed tightly at the neck and wrists, long linen boots with wooden soles, a linen cap with cape covering head, neck and shoulders, and a moist, thin, oval sponge covering mouth and nose and held by a string tied back of the head. The street clothes of the men are placed in dry bags saturated by a five per cent. carbolic solution, and kept there until their work is finished. With their own pails hot water is now brought from the kitchen, and then the infected room is entered. Here are bedding, mattresses, clothing, curtains, wraps, carpet, drapery, and such upholstered furniture as can be removed are first covered with carbolized bags and covers, and then taken down stairs and there placed in one of the 'unclean' vans (air-tight, metal covered large wagons), which remove these articles to one of the disinfecting stations.

"The four disinfectors remain in the room and now proceed to empty their satchels. These satchels are of iron-tin, are shaped like the ordinary traveling bag, and each one contains forty-eight different articles, from a folding iron step ladder with rubber tips, brushes of all sizes and shapes, knives for cutting bread, scrapers, cloths, chamois leather, tin bottles containing carbolic acid, and measuring cups, down to hammer, screw driver, nails, putty and gimlet.

"A five per cent and a two per cent carbolic acid solution and milk of lime are prepared. All pictures and mirrors are now removed, with all the other remaining furniture, to the center of the room.

"The ceiling is then swept clean by a long-haired dry-broom. Now each man brings forth a large, oval-shaped loaf of bread from the inexhaustible depth of his satchel, and with a large bladed knife proceeds to cut large pieces about two inches in thickness. The crust being removed so as to fit the piece in the palm of the hand, each man now mounts his step ladder, and, beginning in the left upper corner of his wall, now rubs down over its surface in long, even strokes, taking care that the evenly cut surface of the bread (which must be exactly twenty-four hours old) brushes down every bit of dust that may adhere to the wall. One can easily see the line of demarcation between the clean and dirty portion when watching this work. After a certain amount of dust has mingled with the uppermost layer of bread, this latter is cut off and the work proceeds with the thinned down bread, and this is repeated as often as the size of the bread will permit.

After finishing the walls the crumbs of bread are carefully gathered from the floor into a tin box, later on taken to the station and burned there. All papered and painted walls are cleaned with bread, and then gently brushed with long-haired brushes dipped in a two per cent solution of carbolic acid. Whitewashed walls are thoroughly washed with a five per cent. carbolic acid solution or milk of lime.

"Wooden furniture, picture and window frames, doors, etc., are now disinfected. Polished and carved surfaces are washed with soft cloths dipped in a two per cent. carbolic acid solution, and immediately rubbed dry. Other wood is washed twice and then dried. Visible spots are removed first with green soap.

"Pictures not under glass are rubbed off dry; oil paintings are washed with a two per cent. carbolic acid solution and rubbed dry.

"Metal surfaces, glass, porcelain goods, etc., are treated in the same manner.

"Upholstered furniture is carefully brushed off with a long-haired brush dipped in five per cent. carbolic acid solution. All leather and fur goods are treated likewise.

"Children's toys are burned or removed to the station for steaming.

"The floor of the room is freely scrubbed with hot water and green soap, and then again with a five per cent. carbolic acid solution, and allowed to dry. Parquet flooring is cleaned with a two per cent. carbolic acid solution, and immediately rubbed dry with soft cloths.

"After finishing the floor, pictures and furniture are replaced.

"All implements used in disinfecting are now cleaned with a five per cent. carbolic acid solution, replaced in the satchels, and then steamed at the station. The overalls of the men are brushed with a brush moistened in a two per cent. carbolic acid solution, replaced in the carbolized bags, and later on steamed at the station. Hands, faces, beards, scalp, and in particular the finger nails, of the workmen are cleaned with plenty of green soap and water. The men then don their street clothes and proceed to the station either on foot or by special wagon.

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Bicycle riding does not appear to be conducive to amiability. No sooner does a man bestride the wheel than he gets his back up.

Careful weighing has shown that an ordinary bee, not loaded, weighs 1-5,000 of a pound, but that when loaded with honey he is nearly three times as heavy, weighing 1-1,800 of a pound.

HARD WATER.

BY SIR BENJAMIN WARD RICHARDSON, M. D., F. R. S.

In many fashionable and, in many respects, beautiful and healthful watering places, much inconvenience is experienced from the hardness of the water. I could point to two famous seaside towns where real injury to health is the result of the hardness of the water. The visitor arriving there for change and rest finds himself for a few days much improved, owing to the change of air and repose from work. Then he becomes low-spirited, is dyspeptic, feels himself distended with gases in the stomach and intestines, sleeps indifferently, is constipated, passes a large quantity of pale urine, is somewhat hysterical, and declares that the place, much as he may admire it, does not suit. Sometimes he feels pain in the stomach, rising up on the left side to the shoulder, and speaks of his liver being sluggish. He takes alteratives, but they do not relieve him, and he leaves, condemning the place for some fault he does not understand. In nine cases out of ten, all these symptoms are due to hardness of the water, and to nothing else.

The favorite sea resorts where this fault occurs ought to know this fact. Brighton ought to know it; Eastbourne ought to know it; Bournemouth ought to know it. These towns spend large sums on means admirably intended to make their visitors comfortable; but they fail in this one particular, vital as it is. They fail also without any reason, for they have the means at their command for remedying the evil at once, if they would only take the lesson. The governing body of every town where the water is hard should send a committee to the city of Canterbury to learn the simple method of softening the water by the Porter-Clark process on a large scale. Canterbury is not a fashionable watering place, but it has set the example of rendering healthful one of the grand necessities of life—drinking water. The inhabitants of that city have all their water supplied to them at four degrees of hardness, and the result is excellent in every way.

Hard water produces the temporary symptoms named above. It does more: taken for a long time, it causes derangement in the function of the kidney, and is very favorable to the deposit of stone in the bladder. It also interferes with the proper infusion of vegetable substances, like tea and coffee, and causes incrustation of vessels in which water is boiled. For ablution and for baths it is very objectionable, and it gives to the laundress much unnecessary trouble. So much the more important is it, therefore, that in all places, but in resorts of health particularly, it should be properly softened and made a surer means of cleanliness as well as of constitutional invigoration.

How to Soften Water.—The above opusculum suggests to me to describe the late Mr. Alderman Hallett's mode of softening water on a small scale. It is very practical. Place near together two two-gallon stoneware casks. Fill one with the hard water, a half pint of lime water being first put in. After standing twenty-four hours the supernatant water will be as clear as at first, and at the bottom of the vessel will be found a precipitate of chalk. The shape of the vessel is best if cylindrical, with the tap-hole a short distance up the side. This form of vessel allows the process to be completed within twelve hours. The second cask (or vessel) is provided to insure a reserve of softened water while the other is being treated. No weighing of lime is required. The lime water is obtained by putting it into a stoppered bottle fresh caustic lime, and water is to be poured on it to fill the vessel. In a few hours the upper part of the fluid is quite bright, and is saturated with lime. The charge of caustic lime need not be renewed oftener than every two or three months. If it is objected that the quantity is small, more vessels can be used, or larger ones, so as to meet the requirements. There is also an advantage in having the water only stored a day or two during hot weather, since on standing it soon ceases to have a brisk taste. Persons who are liable to irritation of the mucous membrane from hard water quickly derive benefit from the continued use of this softened water for drinking purposes.

The softening process might easily be adopted by laundresses by using large casks; the saving in soap would well repay them for a little trouble.

1 cwt. lime will do the work of 20¼ cwts. soap
Cost of 1 cwt, quicklime, 8*d*.
Cost of 20¼ cwts. soap, £47 1s. 8*d*.

There is, therefore, very little question that the adoption of some such mechanical means of mixing, combined with a rapid filtering of the separated chalk, is soon paid for through the large saving in soap alone.—*The Asclepiad.*

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CONTRA-INDICATIONS AND INDICATIONS FOR SEA-BATHING IN CHILDREN.

Sea baths which produce a remarkable effect in certain children, writes Dr. J. Simon, (*Revue Medicale*, June 25, 1893), are very harmful in others, for example, in rheumatics and in nervous children. When one has employed the sea bath at random in many nervous children from the experience thus obtained formal contraindications may be laid down to their employment. Simon says that it is a mistake to give a cold sea bath to children under two years of age. Of course there are exceptions to this rule, but in general they are very badly impressed by cold water, and, as aged persons, do not react well. The sea bath is also contraindicated in nervous children, those who are called irritable, in children who are incessantly in excitement, in those whose intelligence is continually alert, whose sensibility is exquisite and whose sleep is light. Sea-bathing increases the excitement of such children, diminishes their amount of sleep, and renders them absolutely unbearable. Epileptics, hysterical children, and those with chorea are equally badly influenced by sea-bathing. In such, the crises which have disappeared while far from the sea-coast, invariably return after sea bathing. Sea bathing and bathing in water in the vicinity of the sea are alike sufficient to produce the phenomena of cerebral and spinal excitement in children affected with cerebral sclerosis and paralysis. Rheumatics, with or without cardiac lesions, children subject to torticollis, and to the so-called growing pains ought not to be taken to the sea-shore. Acute and chronic ophthalmia, diseases of the ear, and all of the cutaneous affections and contra-indications to sea-bathing; also pulmonary tuberculosis in its incipiency, and most of the pulmonary diseases and kidney troubles are harmfully influenced by it.

Sea bathing seems to the author to be indicated in certain forms of tuberculosis, notably in the adenopathies, the arthrites, and in Pott's disease. The indications for sea bathing are especially absolute for the subjects of rachitis, who find themselves marvelously benefitted at the sea-shore. It is also advisable to carry to the shore children convalescent from grave diseases, those with anemia and chlorosis. Arrived at the sea-shore the children should rest for from five to six days before commencing the baths; the first bath should be short, not lasting more than a few seconds, and even when they have become accustomed to the bathing they should not remain in the water more than five or six minutes.

MISCELLANEOUS.

THE ART OF WINE TASTING.

The true test of the quality of wine is made through the four senses: sight, smell, taste and touch. The effects of wine upon these senses, in the performance of critical tasting, are varied and complicated and much difficulty is experienced by the amateur in describing the sensations. To the French we look for teachers in this art and we find that they have invented a special vocabulary to describe the various qualities of wine. This vocabulary contains such words as *vineux* and *moelleux*, which mean very little to the man who desires to have a truthful knowledge of the quality of the wine. There are, however, a few general directions that may be of value to the wine taster in arranging, judiciously, the various sensations that he experiences when trying to pass judgment upon its quality.

The first impression is made upon the sense of sight. The first question to be determined is, whether or not the wine is in good condition. The appearance of the wine answers this question. If it is in the proper state for consumption it will be as clear as crystal. A perfectly fermented wine, kept in an even temperature, should be clear in two months after making, but it will not become quite bright until after the secondary spring fermentation is completed. If the wine is perfectly healthy, it will appear bright at that season of the year when grapes in the vineyard are "setting." If at this time it is turbid, either the alcoholic ferments are kept at work by remnants of sugar or lactic, acetic or other noxious germs have commenced operations. If it appears stringy or has a peculiar milky appearance, the wine is certainly diseased.

The color of wine is a valuable index to its quality. A claret should not be so deep in color as to appear black in an ordinary wine glass but, with a moderate intensity, should possess that purplish red, without a suspicion of yellow, which is most agreeable to the eye. A young wine of one or two months, should possess a much deeper color since, generally, more than one-half is lost before the wine is ready to be bottled.

Those wines that depend upon color for their value, should be quite dark and as far removed as possible from the orange tint. Sweet red wines like port, from the nature of the treatment that they undergo, cannot keep this purplish tint, even though they possess it when first made and, in them, the orange or tawny shade is appropriate. In white wines the tint usually bears some relation to the general character of the wine. Hocks and kindred wines being light, should have a pale tint bordering on green. The stronger and heavier wines like a Sauterne, tends more to golden. Heavy-bodied, fortified or sweet wines, such as Sherry, Marsala and others, are deep golden and often brown in color. There is another quality that should not be overlooked in the examination of fruity or heavy-bodied wines, that is the appearance of "oiliness." This appearance comes with age and, in correctly judging sparkling wines, cognizance must, of course, be taken of the effervescence which is a special characteristic.

The sense of smell is of great importance in the process of wine testing, for it frequently detects the beginning of lactic or acetic fermentation or other unsoundness, when it would be impossible to discover it through the sense of taste. The bouquet of a wine is a very complex mixture of odors. A portion of the bouquet and, in fact, the only part existing in young wines, comes directly from the grape and gives the wine made from a certain variety of grape, or in a certain locality, a distinctive character. In some cases the bouquet is so strong that through it, one is enabled to tell from what variety of grape the wine is made. This is especially true of the wine made from the Riesling, Semillon and Caberuet varieties. That portion of the bouquet that doesn't come from the grape, the wine acquires through age, first in the cask but more particuarly in the bottle and is principally due to the formation of various ethers.

To properly note the bouquet, a small quantity of wine should be placed in a glass with a wide mouth and agitated gently. This movement of the substance causes it to give off a vapor that should be gently drawn into the nastnes and, as soon as the bouquet has been noted, the wine should be sipped. If too long exposed to the air, wine loses its bouquet, unless it has been perfumed artificially and it is always best to test it as soon as it is taken from the cask or bottle.

Most important, perhaps, of all the senses employed in correctly judging wine, is the sense of taste. It is necessary, to be thoroughly appreciated, that the wine should please the palate. If one decides that a wine which is disagreeable to the taste is unwholesome, he is not falling very wide of the mark. Professor Lassana says that the front part of the tongue is distinguished for its sensibility to minute differences of flavor, while the back part and the soft palate are notable more for the intensity of their sensations. With this understanding, the wine taster holds the substance in the front part of his mouth a few moments, keeping it in motion by gently waving the tip of his tongue. While he is doing this, he should take note of the sweetness, the acidity and the special flavors and, after allowing the wine to pass slowly to the back part of the mouth, information is gotten of the alcoholicity, the age, degree of development, etc. It is at this point that the taster becomes better acquainted with such flavors as nuttiness, and the port and sherry flavors and if the wine has such tastes as the bitter, woody, lactic and acetic, it is then discovered.

If there is too much alcohol, it affects the whole mouth, throat and stomach with a burning sensation. The alcoholicity of an ordinary drinking wine should be as low as is compatible with the wine's keeping and not having a thin, watery taste. The acidity of a light table wine should be firmly prominent but only in that strength natural to the grape. With some practice, one can easily distinguish between the agreeable fruity acids of well made wine and the harsh, repelling acetic or lactic acids, in an ill-fermented or badly cared for article.

Astringency is a quality found especially in red wines and in claret, perhaps, more than in any other. It is agreeable and healthful in moderate proportion but, if too strong, it puckers the mouth and disguises other flavors. Sweetness should be, as nearly as possible, absent from all table wines. Sugar to the extent of fruitiness is a desirable quality in certain heavy wines and, to a great extent, in some ports and sherries. Whatever the nature of the wine, there should be nothing unpleasantly prominent, whether acidity, astringency, sweetness or any other quality. It should taste as a unity. To be properly appreciated, the wine should be tasted early in the morning or before eating and the mouth should be free from the flavor of anything but the wine The wine should be of a proper temperature. As a rule, a temperature of 60 degrees F., is suitable for light, dry wines. The red wines require a temperature slightly warmer. Too great heat or cold disguises or destroys the finer ethers.

THOMAS HOLMES.

CARD COURTESY.

The Whiting Paper Co. has issued a very neat little pamphlet entitled, Card Courtesy, or a Few Words on Visiting Cards and Their Use. From it we glean that the use of visiting cards dates back to a very early period in civilization.

The recognized hours for calling and card-leaving in the society of New York and other large cities is between four and six o'clock. If a lady has a special day for being at home to visitors, calls should be made on that day.

A lady's card should be very nearly square, of moderate size, fine in texture, and, needless to say, white. If married, Mrs. should precede the name on an engraved card and the husband's name should be given in full. The address is printed in the lower right hand corner; the day for being at home in the lower left hand corner, and the engraving is invariably in plain script.

When there are daughters, the elder is entitled to a separate card—as Miss Curtis," for example —only after one or two seasons in society. Up to that time she is supposed (and her sister also), to call only with their mother, upon whose card their names appear, thus :

Mrs. James Chester Curtis.
The Misses Curtis.

Thursdays *12 Lee Street.*

[The above is reduced one-third from the original card.]

The question of the proper style for a widow's card is a much discussed one, and one of which the decision must generally be left to personal preference, the most approved style being to have the card read either Mrs. Blythe or Mrs. Jane Cordelia Blythe.

If in calling the lady asked for is not at home the caller leaves her card. It is allowable to write upon the card the name of the person for whom it is intended if the person is stopping at a hotel. If it be the first call of the season, the lady leaves her own card and two of her husband's, one for the master and one for the mistress.

If the caller should have found her acquaintance at home, she would not leave her own card —only the two of her husband.

Except after a dinner invitation, the husband's card need not again be left in the same season. A first call in a family where there are several adies, mother and daughters, requires that a card should be left for each.

At an afternoon tea or reception a lady leaves her card on entering with the servant or in the tray provided for that purpose. If not able to attend the card should be sent during the reception hours.

Daughters leave cards for their fathers, wives for husbands, nieces for uncles. Sons should do their own calling.

After a church wedding, if the invitation was accepted, a lady leaves or sends a card or cards to her host and hostess. If unaccepted, she sends a card or cards on the day of marriage. If the wedding is at the house the same rules apply. Cards should be addressed to the person or persons issuing the invitation.

In cases of sympathy, whether in sorrow or joy, prompt personal inquiry is imperative, where it is possible. Otherwise a card by mail should be sent with a word of congratulation or condolence, on inquiry, if it is a case of illness.

◆

Col. Bob Ingersoll is a large stockholder in the Gatling Gun Company. The "gospel of humanity" is one thing, and business is another.

THE WORLD GETTING BETTER.

REMINISCENCES.

W. A. Croffut in the Boston *Transcript:*

We have fallen on curious times, indeed, when a man cannot get drunk in public or be seen emerging from a gambling saloon without injury to his reputation and credit. Different, indeed, was it in the good old hey-day of "Blifil and Black George," when Pendleton kept open his "palace of fortune" on the avenue, and presided at a sumptuous dinner every day at five, in full dress, and surrounded by twenty or thirty members of the House and Senate, cabinet ministers, generals, diplomats, and judges, attracted by the pleasures of the duplex table—the faro table immediately succeeding the dinner table The cuisine was presided over by an artist; the wines were bought at auction when bankrupt German dukes sacrificed their cellars; everything was luxurious, and scores of distinguished gamesters chased the ivory chips around the green baize till the morning came in with its glow. Humphrey Marshall, being appointed minister to China, in 1852, dropped into Pendleton's the night before he started to play "one farewell game," and he lost all the money he possessed, his entire outfit, and six months' pay in advance, and Pendleton lent him money enough to carry him to the flowery kingdom where he doubtless taught the funny game to almond-eyed Celestials. And when the good Pendleton died, the mayor of Washington and senators and members bore his pall, and President Buchanan wept at his funeral. And there was no scandal about it, and no reporters watched, as they now would, to see who went in and out at Pendleton's Ah! times have changed! But even that day was visibly more circumspect than society in England a hundred years earlier, for then it seems to have been the fashion for every man to get drunk at every dinner of ceremony he attended; for servants were on hand whose business it was to loosen stiff cravats of gentlemen when they slipped or rolled under the table, so that they would not choke to death. Perhaps the story told by Prentiss is not too familiar to be repeated, how the godlike Daniel made a maudlin speech at a dinner here one night, his hearers shedding inebriate tears, when a Kentucky member, in a frenzy of whiskey and patriotism, jumped up on the table, shouted "Reform or revolution! Liberty or death!" and flung an empty champagne bottle at the head of the great expounder of the Constitution—who hiccoughed defiance as the crystal missile whizzed by him and crashed against the opposite wall. In this Congress there are probably some scores of men who take a drink occasionally, but there is not a confirmed drunkard in either House. Even the half-dozen who sometimes drink too much have not lost their self-respect, and they pay to temperance the tribute of concealing their weakness. There is no man in either House so unconscious of the disgrace of drunkenness as McDougall or Tom Marshall used to be. Even poor Saulsbury made his way into the Senate one day about a month after he had ceased to be a member of it, and being interested in the bill under consideration, leaned on a convenient desk, and, addressing the Vice-President, said he would like to offer a few reasons in favor of its passage. The Vice-President kindly recognized him; his late colleagues forbore to call him to order; but after he had been talking a minute or two, a member took him by the hand and whispered a word in his ear, and retired with him to the cloak-room. —*Literary Digest.*

◆

A girl likes to receive her kissés by male.

HIS LITTLE GAME EXPOSED.

THE REASON WHY THE CIGARETTES "CHAPPIE" SMOKES SMELL SO BAD.

The poor but honest "chappie" has to resort to many a cute device in order to keep up with the procession. Each year he, or it concocts some scheme that costs little or nothing, and everything runs smoothly until the papers get on to it.

His very latest scheme is in smoking articles. That with him, means cigarettes. It was a good scheme, worked well, and until a cigar dealer gave the snap away nobody seemed to be "on."

The dealer said: "Did you see that well dressed fellow who just went out. He gets a small salary and tries his level best to make people think he is in the swim. Last Saturday he bought a box of the very best cigarettes in the market. The best cigarettes come in very neat square boxes, while the cheaper brands are put up in cheaper and less attractive packages. Monday evening the same fellow dropped in again, and I reached over to where my best cigarettes are kept. He blushed a fiery red, and exclaimed: 'No; give me a 5-cent package of Stubbs & Butts.' I gave him what he asked for, and he went over to the lighter in front of the mirror there. I was admiring the cut of the fellow's coat. and in doing so I glanced into the mirror. To my astonishment I saw him changing the cheap cigarettes from their package into the box that had contained the ultra cigarettes which I had sold him Saturday. Then he goes out on the street and flashes that box whenever he wants a smoke. Unobserving persons would think he was smoking the very finest brand, while in reality he was puffing one of the cheapest cigarettes obtainable. I have spoken to several other dealers about the matter, and they have all noticed it, and state that the practice is an extensive one."—*N. E. Grocer.*

NEUROSINE THE MOST POWERFUL NEUROTIC ATTAINABLE.

ANODYNE AND HYPNOTIC.

A reliable and trustworthy remedy for the relief of Hysteria, Epilepsy, Neurasthenia, Mania, Chorea, Uterine Congestion, Migraine, Neuralgia, All Convulsive and Reflex Neuroses. The remedy par excellence in Delirium and Restlessness of Fevers.

FORMULA: Each fluid-drachm represents 5 grains each, C. P. Bromides of Potassium, Sodium and Ammonium, 1-8 grain Bromide Zinc, 1-64 grain each of Extract Belladonna and Cannabis Indica, 4 grains Ext. Lupuli and 5 minims fluid Ext. Cascara Sagrada, with Aromatic Elixirs.

RICHMOND, VA., Sept. 29, 1891.

I prescribe NEUROSINE in the class of cases for which it is indicated, daily, and with satisfactory results. It completely relieves restlessness in Fevers.

Landon B. Edwards

Ed. Virginia Medical Monthly.

MEMHPHIS, TENN, Feb. 6, 1892.

I obtained happy results from the use of NEUROSINE. It is certainly the best neuralgic medicine I have used. I have tried it in some cases of Trifacial Neuralgia, after having tried some of our most powerful remedies. None acted as well as NEUROSINE.

J A Batte

Editor Memphis Medical Monthly.

MEMPHIS, TENN., Jan. 7, 1891

I have obtained entire satisfaction from the use of NEUROSINE in cases of Neuralgia.

Dean Memphis Hospital Medical College.

CHATTANOOGA, TENN., Sept. 6, 1891.

Having used NEUROSINE in a number of cases I must say the preparation has given better results and more universal satisfaction than any other combination ever used by me. Have tried it in many nervous affections, in some it is a specific, in others a therapeutic agent of very great value.

W L Gahagan

Coroner of Hamilton County.

McKENZIE, TENN., Feb. 12, 1891.

NEUROSINE had such a happy effect in a case of Neuralgia or Congestive Headache, in which I tried it, often having failed on other things of similar nature. The case was one of long standing Sick Headache of peculiar character. The lady, three days after confinement, without any fever, took severe headache. NEUROSINE relieved her immediately.

R D Erwin

FOURCHE ARCUAULT, MO., March 29, 1892.

I sent about two tablespoonfuls of NEUROSENE to an old lady, aged 84 years; she had been complaining for some weeks with Headache and Neuralgic pains all over her body more or less. She took that small amount and has been quite free from pain ever since, went to church in a farm wagon, 1½ miles, rough road, and is still free from pain and sleeps and eats better. I am well pleased with it.

U. H. JOHNSON, M. D.

DOSE: From one teaspoonful to a tablespoonful, in water, three or more times daily, as may be directed by the physician.

Supplied in Eight-Ounce Bottles.

To any Physician, unacquainted with the medicinal effect of Dioviburnia and Neurosine, we will mail pamphlets containing full information, suggestions, commendations of some of the most prominent professors in medicine and various methods of treatment. Or to those desiring to try Dioviburnia and Neurosine, and will pay express charges, we will send on application a trial bottle of each.

DIOS CHEMICAL COMPANY, ST. LOUIS, MO.

ACIDITY OF THE STOMACH.

The question has been asked: "What is acidity of the stomach, and how do Ayer's Cathartic Pills act? We answer: Extensive acidity of the contents of the stomach during digestion, a condition spoken of as acidity of the stomach, arises from various causes. The gastric juice, which is secreted by the glands of the stomach, may be poured out in great quantities or it may contain an abnormal amount of acid. But excessive acidity is more often due to the decomposition of food and to a process of fermentation dependent upon an insufficient amount of the gastric fluid.

Among the many prominent and distressing symptoms of this disorder may be mentioned heartburn, a sort of distention or actual pain in the stomach, constriction in chest, loss of appetite, bad taste in mouth, broken sleep, bad dreams, belching of gas, sometimes vomiting, shortness of breath, palpitation of heart, rheumatism, and a state of mind attended by listlessness, looking at things in a gloomy light, depressed or bad spirits.

Vomiting and headache are frequently caused by excessive acidity of the stomach. Another particularly disagreeable result from this condition is a foul and offensive breath, with all which that implies.

Among the more serious results of acidity of the stomach are the disorders which arise from the acids which are created in the stomach, getting into the blood, rendering this fluid corrupt and frequently producing eruptions and other disfigurements usually appearing on the face, the victim carrying his sign wherever he goes.

The author who said that "The beauty of the face is a frail possession," must have observed the results of acidity of the stomach.

To cure this trouble we must bring about good digestion, which is the one safe, certain and indispensable factor to the happy and healthy condition of body and mind.

Beecher said: "We let our blessings get mouldy and then call them curses."

Is there any better way to promote the enjoyment of our blessings than to rid ourselves of the curse of disorders which prevent their enjoyment?

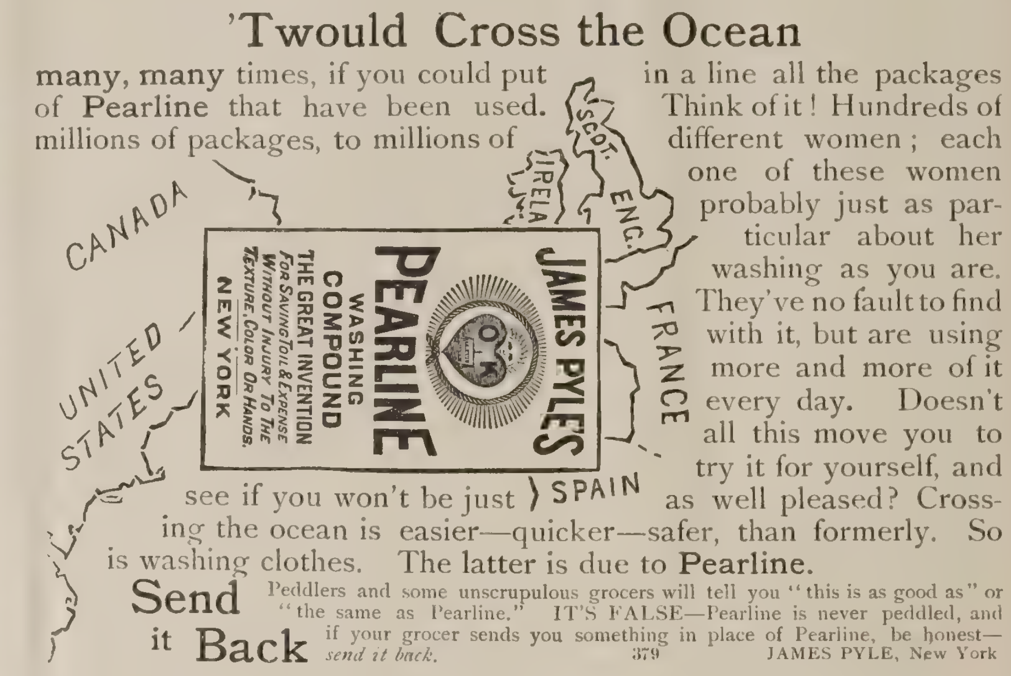
To effect this, no more desirable and efficient remedy can be found than Ayer's Cathartic Pills.

First of all we would state that their value and importance become at once distinctly manifest on account of their direct as well as indirect action in promoting the proper function of the organs of excretion.

It is an established fact that a sufficient and healthy excretion is indispensable in the maintenance of health and the treatment of disease. The results of defective excretion and consequent imperfect elimination of poisonous germs prove the necessity of cleansing the system.

Thus by virtue of their action as a gastric tonic, inducing the removal of the tenacious mucus or unnatural epethelium, sometimes covering the mucous membrane of the stomach, causing slow digestion and acidity, and effecting the removal or preventing the production of the germs which cause fermentation, Ayer's Pills accomplish the good purpose for which they were intended. It is just as certain that an improved excretion exercises a beneficial action upon digestion and assimilation.

Ayer's Cathartic Pills promote the proper excretion of gastric juice; they also influence and regulate the peristaltic movements of stomach and bowels, so absolutely essential to digestion and excretion. Thanks to their careful preparation, Messrs. J. L. Ayer & Co.'s medicines are all compounded after approved formula and from the most carefully selected and best quality of drugs, and kept up to the high standard of excellence which for years has earned for them the reputation of being the safest and surest of family remedies.



'Twould Cross the Ocean

many, many times, if you could put in a line all the packages of **Pearline** that have been used. Think of it! Hundreds of millions of packages, to millions of different women; each one of these women probably just as particular about her washing as you are. They've no fault to find with it, but are using more and more of it every day. Doesn't all this move you to try it for yourself, and see if you won't be just as well pleased? Crossing the ocean is easier—quicker—safer, than formerly. So is washing clothes. The latter is due to **Pearline**.

Send it Back Peddlers and some unscrupulous grocers will tell you "this is as good as" or "the same as Pearline." IT'S FALSE—Pearline is never peddled, and if your grocer sends you something in place of Pearline, be honest—*send it back*. 379 JAMES PYLE, New York

Indigestion

Horsford's Acid Phosphate

Is the most effective and agreeable remedy in existence for preventing indigestion, and relieving those diseases arising from a disordered stomach.

Dr. W. W. Gardner, Springfield, Mass., says: "I value it as an excellent preventative of indigestion, and a pleasant ascidulated drink when properly diluted with water and sweetened."

Descriptive Pamphlet free.

Rumford Chemical Works, Providence, R. I.

Beware of Substitutes and Imitations.

For Sale by all Druggists.

CHINESE IDEA OF THE PIANO.

A Chinaman lately returned from a trip to Europe, Das Neue Blatt, says, treated his countrymen to the following description of the piano: "The Europeans kept a large four-legged beast which they can make to sing at will. A man, or more frequently a woman, or even a feeble girl, sits down in front of the animal and steps on its tail, while at the same time, striking its white teeth with his or her fingers when the creature begins to sing. The singing, though much louder than a bird's, is pleasant to listen to. The beast does not bite, nor does it move, though it is not tied up."

◆

The Lynn *Item* says that "the dainty hats in the store windows are evidence that milliners know how to trim their sales." And the dainty hats on the ladies' heads are evidence that the milliners know how to sell their trims.

NEITHER—A man called in our drug store the other day, and asked for a particular kind of soap.

"Scented or unscented?" asked the drug clerk.

"I'll take it wid me," said the man.

◆

BEWARE OF OINTMENTS FOR CATARRH THAT CONTAIN MERCURY

as mercury will surely destroy the sense of smell and completely derange the whole system when entering it through the mucous surfaces. Such articles should never be used except on prescriptions from reputable physicians, as the damage they will do is ten fold to the good you can possibly derive from them. Hall's Catarrh Cure manufactured by F. J. Cheney & Co., Toledo, O., contains no mercury, and is taken internally, acting directly upon the blood and mucous surfaces of the system. In buying Hall's Catarrh Cure be sure you get the genuine. It is taken internally, and made in Toledo, Ohio, by F. J. Cheney & Co. Testimonials free.

Sold by Druggists, price 75c. per bottle.

TRADE-MARKS AND LABELS.

An Important Suit Won in the United States Court by Lea & Perrins.

One of the most interesting legal cases tried recently in the United States Circuit Court for the Eastern District of Missouri has just terminated in a decision that will be of great importance to the mercantile world.

The facts are that Messrs. Lea & Perrins, manufacturer of the celebrated Worcestershire sauce, brought suit against the Western Distilling Company of St. Louis for an alleged imitation of trade-marks and labels. The infringement of patented labels and trade-marks of late years has come to be a source of much annoyance and loss to many manufacturers, and hence the progress of this case was observed with particular interest. Mr. Benjamin F. Rex, the local counsel for Messrs. Lea & Perrins, pressed the suit against the Western Distilling Company very actively, and at the hearing produced a mass of evidence tending to prove the guilt of the accused.

The result was that a decree has been obtained in the United States Circuit Court against not only the Western Distilling Company, but also against A. C. Stiebel and H. G. Stiebel, Jr., the persons most active in the perpetrations of the fraud, enjoining any further use of Messrs. Lea & Perrins' trade-marks. The decree also confiscates the fraudulent compound and counterfeit labels and holds the defendants answerable to the plaintiffs for the damages sustained by the infringement.

The result of the hearing is very gratifying to Messrs. Lea & Perrins, whose Worcestershire sauce has obtained a reputation throughout the world which its manufacturers propose to maintain secure from imitation and counterfeit. The decree will likewise prove valuable to the mercantile community, in that it preserves the integrity of trade-marks and labels.—*St. Louis Republic, May 7th, '94.*

LITERARY NOTICES.

THE LITERARY DIGEST.

This most valuable weekly is one of the most welcome among our exchanges. To give our readers an idea of its value we state that among the notable articles in *The Literary Digest* for week ending May 26, there were

Under Topics of the Day—America's Markets: For and Against the Extension of Our Export Trade. The Ethics of Dynamite: a writer in the *Contemporary Review* discusses the social conditions that have brought dynamiters into existence. The Gothenburg System: Argument for and Against its Adoption. Civil-Service Reform. Investigation of Charges of Bribery Against Senators. A Plan to Equalize the Burdens and Benefits of Protection.

Under Letters and Art—The Authorship of Shakespeare's Plays; William Waldorf Astor, in *The Pall Mall Magazine.* "Falstaff" in Paris, from *Revue des Deux Mondes.* New and Old Art Criticisms, from *The Nineteenth Century.* George Brandes on Poetry and the "Song of Songs," etc.

Under Science—The Role Played by Dust in Nature; a most remarkable and interesting paper from the *Gartenlaube.* Right-sightedness and Left-sightedness, an illustrated article from *La Nature.* Currents in the Great Lakes, with map. Bees as Messengers, etc.

Under Foreign—Prussia and the Catholics: Several opinions are given, but that of greatest importance is the paper by Graf von Hoensbroech. The Silver Question: Opinions from Mexico, Straits of Melacca and China Russian Progress in Asia: Exemplified Especially by the Building of the Trans-Siberian Railway, three articles from St. Petersburg, Calcutta and London. England and the Suez Canal: Opinions from Rangoon, etc.

Under Religion—Palestina's Prize Mass. Religious Life in Japan. Japanese View of Religion in America. Christianity and Freedom of Worship. From the Russian, etc.

The number will be especially full of information and papers of great interest. It will be liberally illustrated.

The Literary Digest for May 19th contained articles from periodicals as follows:

Magazines: American, 11; English, 10; French, 7; German, 5; Danish, 3; Spanish, 1; Russian, 1. Total, 38.

Papers: American, 45; English, 12; French, 4; German, 6; Italian, 4; Danish, 1; Austrian, 1; Japan, 7. Total, 80.

The price of *The Literary Digest* is $3 00 per year; 10 cents per copy. Funk & Wagnalls Company, 30 Lafayette Place, New York.

THE PHARMACEUTICAL ERA.

The publication office of the *Pharmaceutical Era* has been removed from Detroit to 106 Fulton street New York City.

The May issue of the *Pharmaceutical Era* is called its "Moving Day Number," and commemorates the removal of that paper from Detroit to New York. We understand that the copies of this issue are the most elaborate ever sent out by any drug publications in this country, and the edition is said to be the largest ever issued by that class of papers.

Over the regular cover of the journal has been placed a lithographed cover showing a moving scene on the front page, and a conspicuous New York view on the back cover. The reading pages of the issue have been materially increased, and are embellished throughout by attractive illustrations. Among the special articles is a sketch of the history and mechanical production of the *Era*, also an article on "A Druggist's Visit to New York." The advertising pages are very numerous, and the publication, as a whole, a credit to its publishers.

◆

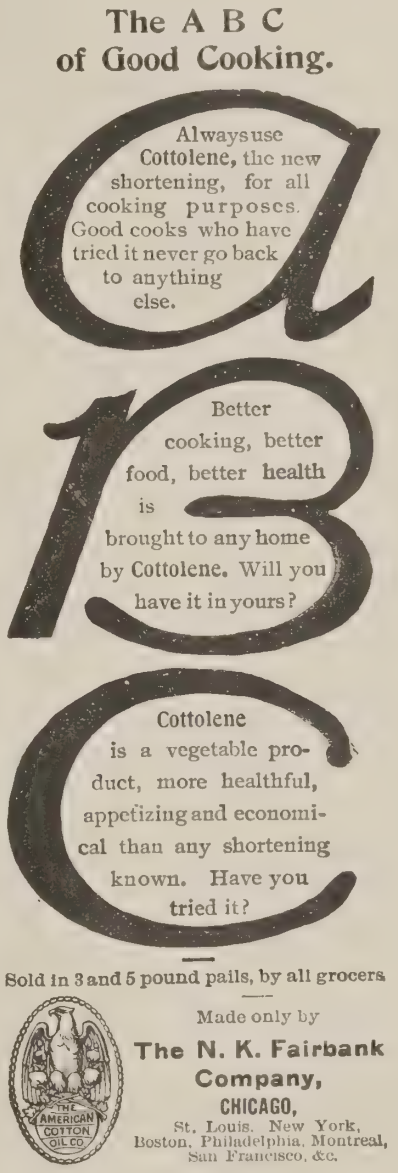
Lemon-colored hair is promised as a new fad among London beauties, many of whom have already adopted it. It may be classed among the lemon aids to complexion.

This is the season when the boy
Tends strictly to his classes,
For if he stops at home he must
Take sulphur and molasses.

Literary men, of all shades of opinion, are in favor of a graduated pen and ink-come tax. Society journalists, however, do not think that there ought to be any tax on personalities.

The Greenhorn. "Arrah, phwat are ye pourin' coffee grounds into the sink for? Don't ye know 'twill shtop oop the sewers-pipes?"

The Other One. "Phwhisht! Shure I do this phwhivier I'm lonesome for gintlemin's society; by this plan I kin count on havin' the attintions of a plumber an' a carpenther for the next three days."


The A B C
of Good Cooking.

Always use Cottolene, the new shortening, for all cooking purposes. Good cooks who have tried it never go back to anything else.

Better cooking, better food, better health is brought to any home by Cottolene. Will you have it in yours?

Cottolene is a vegetable product, more healthful, appetizing and economical than any shortening known. Have you tried it?

Sold in 3 and 5 pound pails, by all grocers

Made only by
The N. K. Fairbank Company,
CHICAGO,
St. Louis. New York,
Boston, Philadelphia, Montreal,
San Francisco, &c.

THE AMERICAN COTTON OIL CO.

THE ORIGINAL CORN STARCH.

50 YRS. 50 YRS

KINGSFORD'S OSWEGO STARCH

THE ORIGINAL

PUREST STRONGEST BEST

Highest Awards

CHICAGO, PHILADELPHIA, LONDON.
1893. 1876. 1851.

Try "SILVER GLOSS."

T. KINGSFORD & SON. Manufacturers. OSWEGO, N.Y. U.S.A.

SOLD ALL AROUND THE WORLD.

BEST QUALITY IS GOOD ECONOMY.

THE STANDARD OF EXCELLENCE FOR OVER FIFTY YEARS.

The Exporters' Hand Book of Mexico.—This book is compiled from *data* gathered by the authority during several years sojourn in Mexico as Manufacturers' Agent, who speaking Spanish, French and German fluently, was enabled to sucure information that to a stranger is difficult to obtain. He claims quality for the book, not size. It contains carefully revised lists of the Bankers, Reliable Merchants in all lines of trade, Professional Men, Landed Proprietors, Mining Companies, etc., in forty-three cities of Mexico; Shipping Directions, Custom Laws, Vocabulary, etc. Leading journals have endorsed my book.

If you are contemplating a trip to Mexico or are desirous of opening up trade relations with Mexico, this book will be found invaluable. It is offered at the moderate price of Two Dollars sent post paid on receipt of price by the author, Philip G. Roeder, 664 Cedar Avenue, Cleveland, Ohio.

BUSINESS NOTES.

ANOTHER MEDAL FOR WM. R. WARNER & CO.

Messrs Wm. R. Warner & Co., the well known pharmaceutical chemists of Philadelphia received a silver medal at the late International Medical Congress held at Rome, Italy. This is a high honor and well deserved distinction on the achievement of which we heartily congratulate this old established firm.

◆

PHOSA.

Phosa is a pleasant summer beverage the basis of which is Horsford's acid phosphate, so prepared as to make it a palatable, cooling, wholesome and refreshing drink. It can be had in New York at Moffitt's formerly Ditman's drug store in the Astor house, New York. It is neatly put up in bottles. We cannot conceive why people should drink the many abominations under the various high sounding titles of Root beer, Iron tonic, etc. etc., when for about the same money they can purchase something much better and far more wholesome such as we know Phosa to be.

◆

We call attention to the advertisement in this issue of the Wall Paper Bargain House, 10 W. 23d Street, New York, wherein very cheap and good wall paper is offered. Why not try a bargain in these times?

◆

TIRED PROFESSIONAL MEN

Use Horsford's Acid Phosphate.

The tired professional and literary men will find nothing so soothing and refreshing as Horsford's Acid Phosphate. This is the testimony of thousands of these classes of men.

Dr. W S. Leonard, Hinsdale, N. H., says: "The best remedy for dyspepsia that has ever come under my notice."

◆

BARLEY CRYSTALS

is the heart of barley, entirely free from bran or hulls, and meets all the above requirements thoroughly, nothing in this way has before been offered to the public.

Both the "Barley Crystals," and the process of manufacture are fully protected by letters patent and trade marks. They are prepared by Farwell & Rhines, of Watertown, N. Y.

Dr. S. C. Clark, a noted physician of Rochester, N. Y., who has devoted many years to the special study and treatment of kidney and liver diseases, writes:

"I have given your 'Barley Crystals' a most thorough test, with a view of ascertaining whether the use of same would secure and produce the effects you claim for it, viz: that of an emollient, a diuretic, a soothing and a sedative agent to the kidneys, in addition to the nutritive qualities which it contains.

I am satisfied that your claims are not strong enough; that it possesses very rare nutritive value, while it has a most satisfactory emolument and diuretic action. I have used the 'Barley Crystals' in my family, and we are all very much pleased with it."

Sick and Nervous Headache

SPEEDILY RELIEVED BY

WARNER & CO.'S EFFERVESCING

BROMO

(WARNER & CO.)

SODA

—USEFUL IN—

Nervous Headache, Sleeplessness, Excessive Study,
Acute Migraene, Nervous Debility, Mania, etc.

— DOSE —

A heaping teaspoonful in half a glass of water, to be repeated once after an interval of thirty minutes, if necessary.

It is claimed by prominent specialists in nervous diseases, that the Bromide Sodium is more acceptable to the stomach than the Bromide Potassium. An almost certain relief is obtained by the administration of this Effervescing Salt It is used with advantage in INDIGESTION, the DEPRESSION following alcoholic and other excesses, as well as NERVOUS HEADACHES. It affords speedy relief in MENTAL and PHYSICAL EXHAUSTION.

Prepared by WILLIAM R. WARNER & CO., Philadelphia and New York.

Sold by Leading Druggists.

ESTABLISHED 1823.

ALEX. YOUNG CO., LIMITED,

DISTILLERS OF

Y. P. M. WHISKIES

DISTILLERY, - Nos. 408, 410, 412 and 414 South St.
MALT HOUSE, Nos. 416, 418, 420, 422 and 424 South St.
STORE, - - - - - - No. 700 Passyunk Ave.

PHILADELPHIA, PA.

New York Office, - - - 78 Wall Street.

FOR SALE BY

ACKER, MERRALL & CONDIT and PARK & TILFORD.

AMERICAN ANALYST.

AMERICAN ANALYST.

Published 1st and 15th of each Month.

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JUNE 15, 1894.

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ARRANT NONSENSE.

An immense amount of pure unadulterated nonsense is constantly being written and passes for science. When this is done simply for the purpose of tickling the vanity or building up the reputation of some would-be scientist, it is bad enough, but when it is done with the malicious intent of hurting the sale of a really meritorious wholesome article it is almost, if not entirely, criminal. Of the latter class, we believe, is an article which has been going the rounds of French and German press and is now being translated and reprinted in British newspapers. It is entitled:

> ### THE TRANSMISSION OF DISEASES BY MARGARINE.
>
> Doctors Scala and Alessi, of Rome, have just published their careful and prolonged studies on the possibility of the transmission of certain diseases by artificial butter.
>
> The use of artificial butter is very widely spread. At Paris, in 1887, the quantity made was equal to that which the milk of 30,000 cows would have produced. In Germany fifty-two factories turn out annually 150,000 quintals of artificial butter. Holland, in 1881, exported 250,000 quintals of such butter. The Commercial Manufacturing Company of New York alone produces 100,000 kilogrammes a week, and the daily production of the factories in the State of New York is a quantity of butter to equal which would require the milk of 300,000 cows. It is, then, interesting to know that artificial butter, when it is prepared from fat taken from animals which have died of infectious diseases, may be, as Doctors Scala and Alessi show, very dangerous to the health of consumers.
>
> In fact the sporogenous bacilli of carbuncle, the gold-tinted pyogenic *staphylococcus*, of pyogenic *streptococcus*, the bacilli of glanders, all survive, both in strained and unstrained butter, the action of a temperature of from forty to fifty degrees for two hours, or thirty degrees for twenty-four hours. The pyogenic *streptococcus* and the baccilli of glanders alone die in strained butter. Moreover, the bacilli of carbuncle can survive in unstrained butter forty-six days and perhaps more, while in strained butter, they live barely twenty-eight days. All other germs die. in both strained and unstrained butter, in about thirty days. The sporogenous bacilli of carbuncle are pathogenic for thirty days, at most, in strained butter; and are always pathogenic in unstrained. The pyogenic *streptococcus* in strained butter is no longer pathogenic after being subjected to the temperature above mentioned, but remains pathogenic, in spite of the cooking, where there has been no straining. The bacilli of glanders have never produced death in the animals which have been experimented on, and there has been but one death among the animals subjected to the bacilli of tuberculosis.
>
> In practice, the results are less harmful, because most of the factories do not purchase knowingly fats from infected animals, and because butter, employed as a condiment, is sujected to a high temperature before use. There remains the danger of artificial butter being mixed with natural butter, and also of the use of artificial butter without its being cooked. Doctors Scala and Alessi conclude by giving the important advice not to employ margarine in the preparation of butter until forty days after the margarine has been manufactured. There will then be a certainty that the obstinate germs of carbuncle will be dead."

The Bible tells us in a most paradoxical manner not to answer a fool, and to answer a fool according to his folly.

This case seems to be one where we must answer a fool according to his folly, lest if we did not answer, people might believe what he so glibly says to be true. Every so called argument he uses is very ancient, and to use a slang expression has very grey whiskers. They are all taken from the great oleomargarine controversy which raged here several years ago, and were at that time fully and conclusively refuted.

One fact, however, which is new, may be stated here, that is that all the oleomargarine made by the packers is made from the fat of animals which have been inspected by United States veterinarians both before and after slaughter, thus precluding the possibility of diseased fats. Even if this were not the case, all these strictures against oleomargarine would apply with ten times the force to natural butter. The whole argument rebounds on the very interests it seeks to help.

SENATE BILL NO. 1,376.

We have been asked if this bill is making any progress or is it likely to pass. We answer emphatically, No. We do so for three good reasons Firstly, the Senate is too busy on attempted tariff legislation and sugar trust investigation to enable it to devote any time to it; secondly, the people have seen through the thinly disguised demagogue who pushes this bill, and have expressed their opinion in unmistakable tones through the public press; and thirdly, the author of the bill is very busy just now watching what he may be very deeply interested in, the Legislative Investigation of the New York police.

HOUSEHOLD.

TESTED RECEIPTS.

Every receipt here given is original, has been practically tested by the AMERICAN ANALYST and is, therefore, confidently recommended.

CALF'S BRAINS EN MALEBOTTE.

Wash the brains in several waters, remove the skin, and boil in salt and water with a little vinegar ten minutes. Take them out and lay in cold water until wanted. Melt a tablespoonful butter in a saucepan, and mix with it a teaspoonful of flour. Add three butter onions sliced, a teaspoonful Worcestershire, a clove, a bay leaf, half a pint of stock, and a wineglassful of Rhine wine. When these are mixed thoroughly together put the brains with them and let them stew twenty minutes.

CALF'S BRAINS FRIED.

Prepare as in the foregoing receipt. Cut them in slices, dip in egg and roll in cracker crumbs, and fry in hot lard. Garnish with parsley.

BROILED LOBSTER.

Cut the tail part of a lobster in two, rub a little sweet oil over the meat and broil. When done spread with butter, the juice of half a lemon and a little cayenne. Place the meat back in the shell and serve.

LOBSTER EN BROCHETTE.

Cut up the tail of a lobster into square pieces; take a few thin slices of bacon and cut into lengths to match the pieces of lobster; place them on a skewer alternately, and broil; baste as in "broiled lobster," and send to table on a bed of water cress.

MAITRE D'HOTEL BUTTER.

Mix four ounces of butter with a heaping tablespoonful of chopped parsley, salt and pepper and the juice of three lemons; serve with boiled fish.

CHICKEN LIVER EN BROCHETTE.

Wash in cold water, dry, and cut in two; cut slices of bacon the same size, put on a skewer alternately, and broil. When done brush over them a sauce of melted butter, pepper, salt and lemon juice.

CARROTS, BOILED.

Wash and prepare the carrots, throw them into plenty of boiling water with salt. Keep them boiling till tender. Serve with melted butter.

ASPARAGUS, BOILED.

Scrape off the white skin from the lower end and cut the stalks in equal length; let them lie in cold water until ready to cook. Put in boiling water that has been salted and cook until tender. Tie the asparagus in bundles, and when cooked put on slices of toast, cut the string off. Serve with melted butter.

DANDELIONS.

Wash thoroughly, put into boiling water, boil half an hour, drain well and put into salted boiling water, boil until tender. When done drain, season with butter, salt and pepper.

SAGO PUDDING.

Soak four tablespoonfuls sago in water over night. Beat the yolks of four eggs, one cup sugar and the sago together; add one quart milk and any flavoring. Put in a steamer and steam one hour; beat the whites of four eggs with a tablespoonful of sugar to a stiff froth. Put the mixture in a pudding dish and spread the whites of the eggs on top. Put in the oven until it browns.

BREAD PUDDING.

One pint of fine bread crumbs, one quart of milk, one cup of sugar, yolks of four eggs well beaten, grated rind of a lemon, piece of butter size of an egg. Do not let it bake until watery. Whip the whites of the eggs with one cup sugar to a stiff froth, add to this the juice of a lemon. Spread over the pudding a layer of jelly or sweetmeats, spread the whites of the eggs over this, put in the oven and brown.

STRAWBERRY JAM.

Put in a preserving kettle and boil fifteen or twenty minutes, skimming as the scum rises. Then add the sugar, allowing three-quarters of a pound of sugar to a pound of fruit. Boil thirty minutes longer, stirring constantly; when done pour in jars or jelly glasses and when cold seal up.

BRANDIED CHERRIES.

Make a syrup of a pound of sugar and half a gill of water for every two pounds of fruit. Heat to boiling, stirring to prevent burning, pour over the fruit while warm, not hot. Let them stand together an hour. Put all into a preserving kettle and heat slowly, boil five minutes, take out with a perforated skimmer and boil the syrup twenty minutes. Add a pint of brandy for every five pounds of fruit, and pour over the cherries hot and seal.

VALUE OF GELATINE AND GELATIGENOUS FOODS.

Although gelatine is an albumenoid, rich in nitrogen, and in many ways related to albumen, it cannot take the place of the latter in a normal diet. It is, however, a natural alley and companion of proteid matter, and when administered with the latter as a part of the daily food nitrogenous equilibrium is established with a smaller quantity of proteid than when the latter food is taken alone. If, on the other hand, gelatine or gelatigenous foods only are fed, then death speedily follows from nitrogen starvation. Thi condition of things is certainly very suggestive as showing the need of animal organism for a certain form of nitrogen—a need which can be wholly supplied only by proteid matter. One reason why gelatine cannot take the place of albumen in repairing the waste of the tissues is to be found in its rapid and complete transformation within the body into katabolites which are eventually excreted in the form of urea. In other words, gelatine is quickly and completely broken down into waste products.

While, therefore, gelatigenous foods have little or no direct value as a part of normal diet, it is not to be assumed, as has been sometimes done, that they are wholly worthless and devoid of all nutritive properties Collagenous foods under the influence of the acid gastric juice, are quickly swollen up, and are eventually transformed into soluble and diffusive products—gelatoses and gelatine-peptone—which are rapidly absorbed. Further, when once acted upon by gastric juice, they are similarly digested by the alkaline-pancreatic fluid, and hence run little risk of passing through the alimentary track unchanged. Gelatine itself is equally digestible in gastric and pancreatic juice, but collagenous matter can be dissolved by the pancreatic ferment only after it has been subjected to the preliminary influence of acid fluids. The real value of gelatine as a food lies in its ability to protect and diminish the consumption of the more important proteid foods. This power rests primarily upon the ease and rapidity with which it is decomposed within the body, giving it value as a substitute in a limited sense for albumenous matter, the metabolism of which, as already stated, it diminishes. Its value, however, is limited, since it cannot be utilized for the purpose of building up or repairing the tissues.

Containing a somewhat greater proportion of nitrogen than the ordinary forms of animal proteids, gelatine yields a larger amount of urea by decomposition, and consequently when ingested, especially in large quantities, may give rise to an excessive elimination of urea, inducing thereby increased diuresis and consequent thirst and demand for fluid. Further, Schiff is authority for the statement that gelatigenous substances promote the secretion of gastric juice, and that consequently they belong to the group of peptogenic foods.

Gelatine has also been observed to produce a slight diminution in the metabolism of non-nitrogenous foods; hence, as stated by Yeo, "it may be accepted as a practical conclusion that gelatine is an 'albumen-sparing' food, and that alimentary substances containing it tend to prevent the destruction of albuminates and fats." Especially useful is gelatine in cases of fever where the stability of the "organic albumen" is threatened, and under such circumstances the capacity for assimilating proteid food is greatly diminished by the addition of gelatine to the naturally light diet of the fever patient.

Without doubt, the efficacy of properly-made beef-tea as a nutrient is partially due to the gelatine it contains, for gelatine taken in this form, or indeed in the form of jellies, is well tolerated and easily digested. As Germain See has well said, gelatine may be taken in large quantity with impunity, and is to be looked upon as "an auxilary means of conservation of our tissues. From this point of view, gelatine cannot be too strongly recommended, prepared in the most various forms and with a variety of flavors." Further, under all circumstances, as a constituent of soup and broths, it occupies an important position among animal footstuffs as an agreeable albumen-saving nutrient—"*Dietetic Gazette.*"

NOT IN HIS LINE.

A book agent attempted to sell a Frankford politician an encyclopædia.

"Cyclopædia?" exclaimed the Frankford man. "No! don't want it. Wouldn't have time to ride it."

A CUP OF GOOD COFFEE.

How often does one get it? How many men and women who drink two or three cups a day of so-called coffee, know the taste and aroma of a well-made infusion of the bean? Many a one will answer these queries by saying that he has good coffee at his house every meal; others will admit that they have a poor cup occasionally, but that in the main their coffee is good. Don't believe them. Prepare a cup of coffee, properly made, and let them taste it, and if they are truthful people they will admit that they have never before, except by barest accident, tasted good coffee.

The making of good coffee starts with the selection of the berry. This must be of the best, and when we say that, straightway arises before our mind's eye the word Mokha. Well—it is true that the Mokha or Yemen coffee is the best, but it is simply out of the question. There is not a pound of it for sale in all America, and I might add western Europe as well. But 64 pounds of it passed through our custom houses during the fiscal year of 1892, and we doubt very much if all of it was true Yemen—the hard, semi-transparent, round, greenish-brown berry that one finds only in Arabia and Turkey. The crop, never a large one, finds a market almost at home, and scarcely a pound of it gets westward of Constantinople. The next best, in the opinion of the writer, is the coffee classed as "fine" old Government Java, though we have had delicious coffee made from choice Mexican and Brazilian berries. Some connoisseurs like a mixture of "fine" Java and choice Rio.

The next essential is in the parching or roasting. If it is burnt it is ruined, but not more effectually than it is when under-roasted. It should be parched in small quantities, over a very slow fire, and should be removed when it reaches a reddish-brown color. Not more than enough for a day's consumption should be parched at once; to ensure super-excellence it should be parched only just before using. Liebig, who was an enthusiast on the coffee question, used to say that coffee should be parched, ground, made and consumed all within the same half hour, and we agree with him. It should, at any rate, be ground only at the moment of using, and should be ground as finely as possible.

The next step in the process is one on which experts have differed, some favoring "dripping," some infusing, and some a mixture of the two. Liebig was of the last class. In his kitchen the coffee for a meal was divided into two equal parts, one of which went into a triangular flannel bag which hung in the mouth of the coffee-boiler, and the other was thrown into the boiler. When the kettle was boiling vigorously, the water was allowed to flow into the bag, dripping through and falling on the coffee below. The boiler stood on a little platform in front of the stove, under which was a bed of coals. The latter kept the dripping nearly at the boiling point, and when the water had passed through the ripper, the latter was removed to the mouth of the coffee-pot, or vessel in which the liquid was to be served, and the liquid in the boiler was again run through it, thus thoroughly exhausting the grounds. This is an excellent plan, and not half as troublesome as it appears to be—in fact, after having the arrangement for keeping the liquid near the boiling point attached to your stove, it is no more trouble than any other plan. The main essential is that the water must pass from the kettle in a state of ebullition, and must be kept near this point until the process is over.

Modern coffee-pots have metallic drippers, but these are, in our opinion, not an advantage. They must be kept most scrupulously clean (nothing is more disagreeable than the odor of stale coffee) which requires rigid attention on the part of the housewife, while a new bag every day, if necessary, or every meal, costs but little time or trouble.

A magnificent cup of coffee can be made, however, by a much more simple process. Wet the ground coffee with cold water, and, if convenient, crush up two or three egg-shells containing a little albumen with it. Have your water boiling, and, placing the pot on a bed of coals, or on the stove top, pour the boiling fluid over the wet grounds. Let the infusion rise in the pot for a moment, stir it down, remove from the source of heat and add a tablespoonful of cold water, and presto! you have a pot of brilliantly clear, fragrant coffee, good enough for anybody.

The Turks and Arabs never allow their coffee to settle, but drink grounds and all, a custom that takes a little time to get used to, but not bad after one does. An Irish soldier, enlisted in the Turkish army, had never tasted coffee at home, and soon learned to drink it Turkish fashion. Later on he was in the English service, and had coffee served as we ordinarily drink it. One day an inspector put in an appearance, and after nosing around awhile, asked the men if they had any complaints to make about their food, its cooking, etc. Everybody was satisfied except Pat, who swore the cooks were a set of rapscallions. "In what way?" asked the officer. "They're chatin' us out of the thick of de coffee, sur," said Pat, and the reply became a proverb.

Who are the greatest coffee drinkers? The Dutch, strange to say, and the Danes and Belgians come next. Holland consumes 21 pounds of coffee per annum for every man, woman and child in the kingdom, while the Belgians and Danes consume 13.8 per capita. The smallest are the Russians, who consume less than one-fifth of a pound per head. The United Kingdom consumes 1 pound per capita, and the United States 7.61 pounds.

Apropos of the subject, Dr. Bossy, the centenarian physician of Havre, of whom we made a notice in our last issue, is a great coffee drinker. In a recent interview he was asked if he used coffee. He answered: "Do I use coffee? It is my passion! When I was in the colonial service I used to drink *forty cups* (*quarante tasses*) a day! Coffee is *not* a poison, as some doctors pretend. Why, I have a splendid appetite and an excellent digestion. I have never even lost a tooth." Liebig used to say the same thing, and drank nine or ten cupfuls a day.—*Natl Druggist.*

NO MORE BROWN SUGAR.

Many roots are tolerably rich in sugar. Everybody must have noticed its presence in carrots, from which, indeed, it has even at times been commercially extracted. But sugar is still more abundant in the beet, whose juice contains about 15 per cent of crystallizable glucose. As an industry the production of beet-root sugar has a curious history.

It originated in France under Napoleon I. when the English blockade prevented communication with Martinique and Hayti. It grew rapidly after the emancipation of the slaves in the British dominions, and, being fostered by protectionist governments on the Continent. It is now beginning to drive the poor antiquated and superannuated cane entirely out of the market. Of recent years, by far the larger part of the sugar employed in England is of French origin or "made in Germany".

That is one of the reasons why brown sugar has gone out and white sugar come so largely into fashion. The sweet and pleasant muscovadees, produced by simple boiling of the crude cane juice, could be employed for sweetening coffee, for the domestic rice pudding, for the use of infancy and for a great many other simple household purposes. The half-refined moist sugar, commonly known as Demorara, still holds its own for these daily purposes.

But raw beet-root sugar displays its origin by an unpleasant earthly flavor; it smacks of the soil too much, and carries with it reminiscences of a somewhat turnipy character. On this account brown sugar has gone out, especially in those course and treacly forms which delighted the palate of our unsophisticated childhood.

Refining is at present almost universal, and the flavorless, insipid, loose grained beet-root sugar, sawn into oblong bricks has invaded our breakfast tables. The light moist sugars now so much employed for cooking purposes are refined sugars of insufficient purity to be crystallized into loaves.

Cube sugar, on the other hand, which is so fashionable that it can afford to present the country with new national galleries of British art, is made from the most crystallizable syrup, which runs away earliest from the charcoal cisterns of the refineries; but it is specially treated in peculiar moulds, from which the remaining molasses is driven off with rude violence by centrifugal machines. The result is pure grains of transparent crystal.

GELATIN.

Gelatin, in a dry state, is a hard, brittle substance; it is semi-transparent. The finer sorts are almost free from color, but the lower grades have a yellowish tint. When dry, gelatin, if placed in cold water, absorbs about 40 per cent of moisture, but it is insoluble until heated.

Gelatin is produced by the solvent action of high pressure steam upon the skins and bones of animals, and the product—gelatin, glue or size—depends upon the selection of materials, the temperature to which the solutions are exposed, degree of classification attained, etc. Gelatin is best extracted from bones by the combined action of steam and a current of water arranged to trickle over the crushed fragments in a suitably constructed apparatus. The crushed materials are subjected to a steam blast at a temperature of 223 degrees F., and a pressure of about thirty pounds to the square inch. The solution obtained is purified by melting at 120 degrees F., and straining (in some processes the aid of albumen is resorted to in this last operation).

From skins the "brilliant gelatins" are prepared thus:—The hides and skins are cleaned with water, then cut into small pieces, and crushed into pulp by machinery. The pulp is pressed between rollers, next mixed with water, and then heated to from 150 degrees F. to 212 degrees F. When a very fine and pure product is desired, the solution is mixed with a small quantity of ox-blood at a temperature not exceeding 170 degrees F., and heated. The albuminous matters in the blood become coagulated and rise as a scum, carrying with them the impurities. The heat is then withdrawn, the scum removed, and the purified liquid allowed to settle and run into coolers to congeal and dry. It is evaporated *in vacuo* to avoid undue exposure to heat.

Much of the French gelatin used for confectionery and culinary purposes is prepared from bones by action of acid. The bones employed are placed whole in vessels containing a mixture of one part strong hydrochloric acid with four of water. They are allowed to remain in the acid liquid for about seven days, during which time all the earthy matter becomes dissolved, and only the animal, or gelatinous, parts remain. This is called osseine. While this process is going on, great care is taken to keep down the temperature of the place where the vessels are kept, for if too much heat is allowed, there is a risk of the materials becoming putrid. After a week, the mass is removed from the liquid and dried. It is next digested in boiling water, at a temperature of 212 degrees F., until dissolved and converted into gelatin. When the process is ended, the solution of gelatin is strained into a clean vessel, allowed to become solid, and is then cut into blocks, the large pieces being afterwards divided into thin transparent plates or strips. Sometimes the fluid is removed from the pans in which it is made while boiling, and is poured into a vessel surrounded by cloth, or some other non-conducting substance, in which it is allowed to slowly cool, depositing its impurities as it does so. During the boiling of the macerated bones, some fat usually rises to the surface of the liquid; this is collected and sold for various purposes.

The red or Russian gelatin, as it is sometimes called, is simply gelatin colored with cochineal, and dried in small thin sheets. It may be used precisely the same as any other gelatin. As the demand for it is light, it is not universally held in stock by dealers.

The Chinese and Japanese manufacture a very powerful gelatin from a variety of seaweed, gathered on various parts of the coasts of those countries. The weed is called by the natives *tengusa*, and the gelatin product obtained from it is named *hai thao*. The latter is prepared in various ways, in thin tablets, in bundles of thin threadlike strips, and also in sheets as thin as paper. By soaking in cold water for twelve hours it becomes jellified, and in so doing absorbs an enormous quantity of the moisture. A very valuable quality in this gelatin is that it is not affected by any change of climate; jellies made from it will be as good, and relatively firm, in a temperature of 160 degrees F. as in that of 40 degrees F., a fact which makes it a very excellent article for exporters of jams and jellies. It is very largely used by manufacturers of table jellies and concentrated jellies, and fortifying weak jams. There cannot be a doubt that where good and pure quality gelatines are used it forms a nutritive and useful article of food, besides being a valuable and economical ingredient for the purposes of the confectioner and pastry cook.—*Confectioners' Union.*

TO KNOW GOOD SILK.

To know good silk from bad is, the experts tell us, among the few things that are easier done than said. But here are a few simple rules, derived from the knowledge of one of these same experts, that may help to save the inexperienced from the goodly outside which so often falsehood hath in silk, especially black silk, the dear delight of the economist, the wildest extravagance of the spinster. As there is no other fabric so much the livery of genteel poverty, so also there is no other in which it is less safe to invest your money without due and proper care. The first, the greatest safeguard is never to let yourself be beguiled into buying very cheap black silk, no matter what pretext may be set forward to excuse the cheapness. Though it is barely possible that bankrupt sales may now and then furnish a genuine bargain in the fabric, the possibility is so very slender as to warrant the advice of going without if you cannot pay a fairish price.

Costliness, though, is no guarantee of excellence. A good plan is to buy an eighth yard, and test in the leisure of your home. It may seem a waste to those who need to count every penny, but will prove an excellent investment, if it prevents a bad bargain. The first thing to do is to try and tear it both lengthwise and crosswise. If it gives way readily in either direction be sure either that the dye has destroyed the strength, or that the thread is composed in part of what is technically known as silk waste. Pure silk, properly dyed, is the strongest known fiber. Nearly all the cheaper dyes, particularly the dark and black ones, have a basis of metallic salts that eat into and weaken what they color.

Next, test the firmness of weave by scraping diagonally across the fabric with the thumb-nail. If it is durable and worth buying, the threads will not slip for any amount of manipulation. Otherwise, the thumbnail will soon make a space of loose threads as big as itself.

After that, ravel out a bit of the silk and look carefully at the quality of both warp and woof. Sometimes a pure silk warp has heavily loaded woof. At others, especially in satin weaves, so much of the woof as comes on the surface is of pure silk, with inferior backing. The pure silk, unloaded, is of a lively lustre and very soft to the touch. If the lustre has been artificially produced, the fiber feels harsh and brittle. If it is silk, but loaded with metallic dye, the fiber looks like cotton, but is somewhat softer.

Another test of quality is to pull out threads both ways and try their strength between the fingers. That is, catch them with both hands about an inch apart, give a quick outward jerk, and note the force necessary to break them. Then try to tear the silk along the lines that the threads came out of.

If it parts so difficultly that there are puckers along the tear, it is proof that it will wear decently well.

The supreme test of all, though, for either weighting or adulteration of fiber, is to burn a fragment of the stuff, and also some ravelings of it. If it is pure and properly dyed, it will take fire with difficulty, even when held directly in flame. It will go out almost as soon as the flame is withdrawn, leaving ashes that are nearly jet black.

On the other hand, weighted silk is almost dangerously inflammable. It takes fire readily, and, once burning, will smoulder through the piece, leaving ashes that keep the shape of the cloth and are of a light yellowish red color. If there is cotton mixed with the fiber, the smell of the smoke will betray it.

The requisites of a thoroughly good silk are strength, smoothness, lustre and richness, without weight, no matter how thick the texture. Adulteration invariably causes a harsh feeling. In heavy weaves, such as brocade, it is particularly important to see that the foundation is of sound, firm silk, as otherwise the fabric will not repay the cost of making.—*Refle.*

DO NOT REMOVE THE SKINS.

Dr. Letheby, an eminent English authority on foods, made a series of careful examinations some years ago for the purpose of determining the effects of cooking potatoes without removing the skins. He found that when potatoes were cooked without removing the skins, the loss of nutritive material by extraction of the juice of the potatoes was about 3 per cent. When the skins were removed before boiling, the loss was 14 per cent, or one-seventh. It thus appears that removal of the skins before boiling is a very wasteful process, and these experiments explain why baked potatoes are more palatable than boiled. It is also evident that a roasted or baked potato is more nutritious than a boiled potato.

CLEANING KID GLOVES.

To clean white kid gloves without benzine, whose odor is offensive to many, a solution of soap in hot milk is recommended (*Pharmaceut*). The yolk of an egg beaten to snow may be stirred into half a liter of the solution and a few drops of ammonia water added. The gloves are drawn upon the hand and rubbed with a woolen rag dipped in the mixture. By hanging them in the shade to dry, the leather will keep soft.

MEDICAL.

CONSUMPTION.

EXTRACT FROM A LATE WORK BY W. S. DAVIS JR., M. D.

It is a prolonged stay in rooms imperfectly ventilated, crowded, and therefore filled with air which is especially liable to contamination, that makes the employés of certain factories peculiarly susceptible to consumption. The breathing of such a close, impure air is often the chief cause of susceptibility among the poor of our cities. They work in ill-ventilated shops that are crowded with work-people, and then sleep in small rooms in which often the outside air cannot enter directly, and in which several may sleep simultaneously. Unfortunately, these same persons are often exposed to some of the other causative factors of the predisposition. A legal examination into the sanitary conditions of factories, tenement houses, and the homes of the poor cannot be made too rigid. The construction of a sleeping room of inadequate size or without sufficient ventilation should not be permitted. I do not urge this only because consumption may be caused if due regard is not paid to the hygiene of factories and houses, but because the danger from any disease is so greatly increased when the sufferers live in poorly-ventilated apartments. For example, typhoid fever, if treated in the open air, or in a roomy and well-ventilated apartment where the sufferers can be well nursed, produces a very small mortality. But when it is treated, as physicians are often compelled to treat it, in rooms seven by twelve feet in surface area, with a window that opens into a court, not more than a yard wide, between buildings, and with a door that opens into a room in which the food of five or six persons is cooked, and where they eat and congregate, the mortality is very great. In such rooms, too, consumptives live and spend much time. Is it astonishing that under these conditions the disease runs a rapid course, and is especially malignant?—*Consumption.*

FUNCTIONS OF TONSILS.

The use of the *vermiform appendix* has never yet been determined unless it is, as is supposed by many naturalists, the connecting link between man and the brute creation. It is often the seat of serious and often fatal trouble, and anatomists and physiologists would have been very glad to have found a use for it in the human economy if possible. Clado, in quite an interesting monograph, attempts to show that the functions of the appendix are those of a gland, and that it acts as an intestinal tonsil. The investigations of Dr. Gullard, published in the *Edinburg Medical Journal*, raises the tonsils to a higher dignity in the physiological work of the human system than they have ever had before. According to Dr. Gullard the tonsils faucial, lingual and pharangeal constitute a very complete leucocytes factory, arranged to further the reproduction of leucocytes by mitoxic division of pre-existing leucocytes. The reproduction is sufficiently active, as a rule, to keep up a continuous outward stream of these cells, prevent the entry of foreign substances into the tonsils, form a protective ring or zone between the mouth which abounds in microbes, and the rest of the alimentary tract, and form a protective ring around the upper part of the respiratory tract.—*Western Med. Reporter.*

HYGIENIC.

MR. THOMAS A. EDISON'S NONSENSE.

It would be contrary to human nature if the successes achieved by Mr. Edison in the role of an inventor in the realm of electricity, and the consequent adulation that he has received on that account, did not somewhat swell his already massive cranium and give him chronic megalocephaly (which is dog-Greek for the big-head). It is, therefore, somewhat to his credit that he has not slopped over in this direction more than he has, and when he does appear in the role of Sir Oracle one does not feel quite so much like taking him down as we would had he been less useful to the human race. Occasionally, however, he oversteps the bounds, not merely of modesty, but of common sense, and needs to be reminded that his successes as an electrician do not qualify him to pose as a reformer in chemistry, physics, or physiology.

Some years ago, when he was fitting up his laboratory at Menlo Park, he announced, through his usual medium of an interview with some New York journal, that chemistry, as taught at the time, needed a complete revision as to facts, and that he was going to give the world such a revision. He cited, as one of the points upon which he based his statements, that while the books declared platinum to be one of the most refractory of metals, melting at a temperature attainable only by the oxyhydrogen blast, he could melt it in the flame of an ordinary candle if it were only divided sufficiently—drawn out into a sufficiently fine wire. The fallacy of this method of reasoning was of course obvious to every man of education, as was that of his subsequent talk.

The latest fad of Mr. Edison, however, is one in which he appears in the role of physiological reformer, to wit, as an advocate of the uselessness of sleep, and the consequent waste of time and energy spent in that state. A few weeks ago the telegraphic columns of the great dailies announced that Mr. Edison had discovered that sleep is an acquired habit, and not a physiological condition; that man had acquired this habit during the ages prior to the time when he had learned to make a light, and thus save a portion of the hours of darkness. Mr. Edison, having by his electrical inventions enabled man to turn night into day, and to produce sunlight at will, had done away with the conditions which made sleep necessary, and now it only remains for man to free himself from the acquired habit, which he can and will do, easily.

All of this is, of course, the veriest nonsense, the conception of a mind illy balanced, and deficient in physiological education. It would be scarcely worthy of notice were there not a large and constantly growing class ready to seize on every crazy conceit emanating from a man made successful, famous, or notorious, in any walk of life, and to make it a fad for the time being. Should such be the case it will be difficult to estimate the mischief that may be done; but one result is certain, and that is a large accession to the numbers of patients in lunatic asylums and institutions for those afflicted with nervous and mental diseases.

Sleep is a normal or physiological condition, not peculiar to man, but existing in some shape or degree in all forms of life, through all its gradations of manifestation, from the vegetable to man. It is a fundamental law of nature, manifest in all vital phenomena, that periods of physiological rest must alternate with periods of similar activity, the energy expended in work being restored by and during rest. While sleep is partially under control of the will, and to a certain extent affected by surroundings, it occurs in health periodically, appearing at definite rythmical intervals, and in defiance of the will or prevailing circumstances. That the great majority of animated creatures choose night for sleeping, is due to the fact that they cannot utilize that period as well as they can the daytime in their usual occupations, and not from any real coincidence in the period of the oscillations of vital energy and the alternation of day and night. This much is a habit, and man can change his time for sleep at will, without any detriment to his health, but he cannot habitually abridge the period necessary to recuperation, even by a short time, without doing serious injury to his physical and mental faculties.

In an investigation made by Liebig, and referred to in these columns on a previous occasion, the experiences of twelve centenarians questioned by him as to the mode of life by which they had attained longevity, agreed in but one particular, they were all good sleepers—they never allowed anything to interfere with their hours of rest, and if Mr. Edison hopes to round out his very useful life he will imitate them.—*National Druggist.*

TAKE ENOUGH SLEEP.

A VIEW CONTRARY TO THAT LATELY ADVANCED BY EDISON.

Adages are not always to be depended upon for good advice. Do not be deterred from taking all the rest necessary for your particular case by saying "Nine hours are enough for a fool." To take enough sleep betokens wisdom, but "to sleep" does not mean to lie lazily in bed when once you are awake. "Nature takes five, custom seven, laziness nine, and wickedness eleven," is wrong in at least two of its assertions. There are very few instances in which nature does not demand more than five hours' sleep. It is true that sleeping, like eating, is very much a matter of habit, and you may train yourself to dispense with more than five hours' sleep as you may to omit the third meal of the day. How long you will flourish under such a regimen will depend upon the strength of your constitution. You may fare like the man's horse, who, when it had been reduced to a diet of one straw a day, in the most ungrateful manner died on his hands.

A person may need nine hours sleep out of the twenty-four without being either lazy or foolish. Indeed, he is a wise man if, feeling that he requires them, he is sensible enough to take them. Goethe, when performing his great literary feats, took nine hours' sleep. A full-grown adult, in a healthy condition, will seldom require more than eight. If, however, he discovers that he is not sufficiently refreshed by eight hours, he should take more. It is a pretty safe rule to sleep as long as you are sleepy. "There are people," says a writer, "who are wise enough to eat when they are hungry, but who have never attained that higher reach of wisdom to sleep when they are sleepy." Unless you are a very lazy person, indeed, you are not likely to take more sleep than your constitution requires, for of course lying in bed is not sleeping.

By shortening the necessary hours for sleep you may bring upon yourself the dreaded disease insomnia. There are scientific writers on this subject who claim that the best remedy for this is to learn to sleep in the daytime.

This is very well where, from some cause—work, or watching, or pleasure—you may have failed to get your needed sleep for a night or two. There is undoubtedly a great virtue in naps, even short ones, and the art of napping in the daytime, although I could never acquire it, is a desirable one, and, like most arts, is a matter of practice. Still it is a bad practice to get into the habit of turning night into day, and if you are not kept awake by care or illness, but merely have lain awake because you could not sleep, I should recommend you to fight the consequent drowsiness of the next day in order that you may, if possible, resume your natural rest at night. Sleeplessness is generally the result of the unfortunate habit of "thinking," generally on unpleasant subjects, after one has retired for the night. Dr. Frank Hamilton, a great physician and a wise man, said: "Gloomy thoughts prevent sleep. The poor and unfortunate magnify and increase their misfortune by too much thinking. 'Blessed be he who invented sleep,' but thrice blessed be the man who shall invent a cure for thinking."—*Detroit Free Press.*

ADULTERATION.

WHOLESALE WATERING OF SPIRITS. LICENSED VICTUALLERS PROSECUTED.

At Doncaster, on November 4th, Albert Trueman, licensed victualler, Bawtry, was summoned for having sold whisky 30 degrees under proof and gin 55 degrees under proof. He pleaded guilty to both offences, and a fine of 40s., including costs, for the whisky, and a like penalty with respect to the gin was imposed. Rebecca Cuckson, of Bawtry, was charged with having sold whisky 36 degrees under proof, and gin to the extent of 40 degrees. Fined 40s. and 30s., respectively. Fanny Thornhill, of Bawtry, had to pay £1 5s., including costs, for selling whisky 29 degrees under proof. Thomas Henry Woodcock, of Bawtry, had to pay the costs for selling gin 36 degrees under proof. Robert Barham, of Tickhill, was charged with having sold whisky 28 degrees under proof and gin 42 degrees under proof, and he had to pay fines of 40s. and 20s., including costs. Edward Bailey, of Tickhill, for selling whisky 35 degrees under proof, was mulcted in 40s., including costs. The information in each case was laid by Mr. J. Wilson, of Rotherham, inspector under the Food and Drugs Act. The defence in each case was a plea of ignorance. The chairman said the law had been in force about twenty years, and the innkeepers ought to have known all about it. It was a serious offence, and a fine of £20 could be imposed. Addressing the defendant Trueman, the chairman said in every gallon of whisky there was 10 per cent of water added beyond the minimum of legal strength—in every 100 gallons of whisky sold there were 10 gallons of water beyond that allowed by law. In the case of gin there was 33 per cent excess of water, so that in every three gallons one gallon of water was sold beyond that allowed. In Mrs. Cuckson's case, he said, on her own confession, she had been defrauding the public in this way for the past 40 years. The defendants would have to be very careful for the future

GROUND GINGER ADULTERATION.

Grocers should take warning by the first conviction at Sheffield. It is some months since we informed grocers of the practice of adulterating ground ginger by adding "spent" ginger. It is an adulteration undetectable by the retailer, and against which he can only guard himself by dealing with houses of unquestioned repute, and buying always with a "warranty." In the following case the penalty was rightly a small one. It is not likely to be so in future, now that public attention, as also the attention of the trade, have been forcibly directed to this artful adulteration. It would be a mighty boon to honest wholesale traders, retailers, and the public if, instead of our ignorant chemists at Somerset House—not one of whom knows anything of such adulterations as this, of adding "spent" ginger to the genuine article, or, if they did know of it, possesses the capacity to analyse it—we had a Government department, with genuine scientists alert to discover new forms of fraud, and that would regularly warn traders against them. It would save many scores of honest retailers from prosecutions that injure their reputations and pockets, and save millions of pounds per year to the public.

At Sheffield, on January 19th, Messrs. Nicholls and Co., grocers, of Langsett-road, were summoned for selling ground ginger which contained exhausted ginger in the proportion of 40 per cent. The Deputy Town Clerk appeared to prosecute, and Mr. W. E Clegg was for the defence. Mr. Sayer, Deputy Town Clerk, in opening the case, said it had been known for some little time by analysts that the practice of mixing ginger exhausted of its native properties with ground ginger had been common, but until recently they had not discovered an analytical test. Now, however, they were able to separate the parts. What he had been told by the analyst was that this ginger was used by manufacturers to aerate water, and they extracted the pungent essence of the root for the purpose of making gingerade, etc., and the ginger was afterwards ground and mixed with good ginger. Mr. Clegg, he added, had given notice of his intentions to rely on a warranty which Messrs. Nicholls had received with the article, and he had a perfect right to do that if a warranty were given. Inspector Harrison gave evidence of the purchase of the ginger. He paid three halfpence for two ounces. Twopence for two ounces was the highest price he had ever paid, he added in cross-examination. Dr. Littlejohn, Medical Officer of Health, was called by Mr. Sayer, and asked what would be the effect of the addition of the exhausted ginger. He said it would weaken the pungency of the whole. The Magistrates: Practically, as an illustration, it would have the same effect on the ginger as the addition of water would have upon milk. Dr. Littlejohn: Practically, it would. The Magistrates: Or the effect would be the same as extracting cream from milk. Dr. Littlejohn: It is very similar; it is extracting the active principle. The Magistrates' Clerk: What causes the power of the ginger to go? Dr. Littlejohn: It is exactly like tea. A second infusion is always weaker than the first. Ginger is used as a tonic and for the stomach, and, therefore, if you extract the active principle, and take what is left, you have a weaker extract. You get the goodness out of the ginger as you extract the good out of tea. Mr. Clegg addressed the Bench for the defence. It was no part of his duty, he said, to defend this ginger if it was a preparation which contravened the Act. This was, as far as he knew, the first case of its kind which had been brought into court, and it was a very important matter indeed to grocers all over the country. There was no evidence before the court that this ginger contained anything except ginger; there was no adulteration of it, there was no foreign body put into it. The only point the Corporation made with regard to it was this, that, given a certain standard, which was not before the court, this ginger was weak. He laid great stress on the important point that there was no standard of pure ginger before the Court, arguing that a standard could not be assumed, and that the non-existence of a standard deprived the prosecution of a starting point. Further, he contended that it did not prove an offence under the Act if a purchaser got something weaker than he expected. Tea he took as illustrating the varying qualities of an article, both as to quality and price, and he asserted that the same conditions were associated with ginger. As to the question of warranty, Mr. Clegg said that the defendants had bought the ginger from Messrs. Drysdale, Denison and Co., of Upper Thames street, London, whose traveller assured them it was pure, and that they would be quite safe in selling it. When Messrs. Drysdale and Co. were informed that samples of this ginger had been taken for analysis, they wrote to the defendants saying that it was perfectly genuine. The defendants were, therefore, protected under the Act, as they had a written warranty from the wholesale dealers that the ginger was all right. Messrs. Drysdale and Co. had been informed that this summons had been taken out against the defendants, but they had not taken the trouble to attend and defend the case. He argued, in conclusion, that Messrs. Nicholls purchased the articles as the same in nature, substance, and quality as that demanded, that they had a written warranty to that effect, and that they had no reason to believe that it was anything different. Mr. J. Goodall, managing partner of the firm of Nicholls & Co., gave evidence in support of Mr. Clegg's statement, and in the course of further argument, the Magistrates said they took it that there was no imputation on the firm. It was merely a test case as to whether it was a right thing to use exhausted ginger. Mr. Clegg: I am glad to hear you say that. Mr. Goodall, answering a further question, said that the ginger cost him 6d. per lb. wholesale. The highest price he had ever given for ginger was 3d. per ounce at a chemist's. The Magistrates: There is a difference between buying at a chemist's and a grocer's. The ordinary "ginger of commerce" is two ounces for three halfpence. Mr. Sayer replied to Mr. Clegg's arguments. On the question of standard, he could not conceive that there could be a better standard than pure ginger, and that was, no doubt, where the analyst started. There was another case of a similar kind, the defendant being J. E. Peel, grocer, of Langsett-road; and, as he purchased the ground ginger of Messrs. Nicholls, it was agreed that the decision in one case should govern both. The Magistrates, after retiring, said that having regard to the fact that the analyst's certificate was practically unchallenged, they were of opinion that the defendants had sold an article which was not of the nature, substance, and quality demanded, and under those circumstances there would be a conviction. They believed, however, that no fraud was intended, though perhaps some carelessness had been shown by Messrs. Nicholls, and a nominal penalty of 10s. and costs only would be inflicted in each case. Mr. Clegg intimated that Messrs. Nicholls would pay the fine and costs in Mr. Peel's case. —*Food and Sanitation.*

SALICYLIC ACID AS A FRUIT PRESERVATOR AND ITS DANGERS.

The *Pharmaceutical Era* gives the following information and warning about salicylic acid.

Below are given a few of the more common methods in which salicylic acid is used as a preservative agent.

(1.) A liquid for preserving fresh fruits in their natural state may be prepared by dissolving three parts of salicylic acid in a solution of sugar varying in strength from 10 to 20 per cent. the former for those containing less, the latter for those containing more sugar. The preparation should be boiled, and when fully cooled, the sound and uninjured fruits are careully introduced The vessel should be tied over with "salicylicated paper.

(2.)

Salicylic acid	1 oz.
Boric acid	4 ozs.
Water	10 pints.

Dissolve the acids in the water by the aid of heat. Two ounces of this solution are used with each quart of the fruit to be preserved, adding sugar, etc., in the regular way. Suitable for all soft fruits, berries, etc.

(3.) A solution of salicylic acid 1 ounce, in alcohol 1 pint, may be used for preserving fruit, a tablespoonful being used with a quart of fruit and the ordinary quantity of sugar.

(4.) *Vegetable Preserving Solution*:

Salicylic acid	1 oz.
Boric acid	4 ozs.
Rock salt	8 "
Alum	1 oz.
Water, enough to make 10 pints.	

Dissolve by the aid of heat and use three ounces of the solution for each quart of corn, peas, beans, or other vegetables desired to be preserved, cooking them in the usual manner before canning.

Salicylic and boric acids are stated in the formulas given above, are used to some considerable extent as preservative agents, either under their own names or as proprietary preparations, of which they form the essential part. There has been much written upon the use of salicylic acid as a preserving agent in articles of food and drink within the last few years. While it is not named as an active poison by authorities upon toxicology, there can be little doubt that its use in considerable quantity, or for a long period of time, would have an injurious effect upon the system. Its usefulness as a preservative agent depends upon the fact that it is an antiseptic and as such, it has power of retarding putrefactive processes and changes. From this fact arises the greatest danger in its use as a preservative agent. The value of food depends very much upon the readiness with which it is assimilated in the process of digestion. As this process is mainly a destructive one, it is argued that anything which retards such a process outside of the body will also have a similar action within it, and hence necessarily impairs to some extent its nutritive value. Another objection to its use is that of the drug itself upon the human economy.

In medicine besides its use externally as an antiseptic and an anhydrotic, it is administered very extensively internally as an antipyretic and a remedy for acute rheumatic fever. Inhaled it causes irritation of the respiratory passages, producing sneezing and cough. In small doses it stimulates the stomach, heart and respiration, but moderate quantities derange the stomach, causing nausea and vomiting, while large doses depress the heart's action and the respiration after a primary excitation of both. In the blood it is first changed to salicylate of sodium, but a portion of it is again set free and uniting with the glycocoll forms salicyluric acid $HC_9H_8NO_4$), coloring the urine green. It is slowly excreted through the secretions generally, especially in the urine, sweat, saliva and bile. It stimulates the kidneys, at the same time disinfecting them and increasing the acidity of the urine, but may so irritate the kidneys as to produce albuminuria and hematuria. Authorities in therapeutics warn practitioners of medicine against its administration to patients whose kidneys are known to be diseased. It might be stated that its use as a preservative agent in any form for food or drink was forbidden in France by ministerial decree in 1881. This decree was based upon a decision of the consulting committee of hygiene that its constant use was dangerous to health. In Germany its use is prohibited, except in beers intended for export to other countries where its use is allowed. Its prohibition in France called forth a great deal of opposition, and experiments were made and published, which were intended to show that its constant use in small doses exerted no injurious influence upon the system. Kolbe, *Foods and Food Adulterants* (Bulletin 13, Reports Department of Agriculture), made experiments upon himself and his assistants by taking doses of 5 to 1.0 gram daily for several days, and found no appreciable ill affects to follow its use. Whether such experiments suffice to prove its harmlessness when used for many years and without regard to age, sex, or personal idiosyncrasy, is still an open question. In articles of daily consumption, and in consideration of the prevalence of kidney disease at the present day, it is questionable whether its use for such purposes is prudent and wise.

NEWSPAPER SCIENCE ON ADULTERATION.

When one picks up the average daily journal, and especially the Sunday editions, and wades through the mass of stuff that they get together under the heading of Popular Science, or Science Gleanings, or some other such misleading title, he wonders what sort of men are employed as editors or reporters of the same. Some journals, it is true, appreciating the importance of having such matter nearly correct, employ men of some scientific training to edit this department. The *Globe-Democrat* of this city, for instance, has well edited departments of electrical news, engineering and mining news, etc.; but it is needless to say that the *Globe-Democrat* is exceptional in this respect, and even in it we frequently find egregious blunders and scientific misinformation. These generally get in through the ambition of reporters, anxious to work up a sensation.

Recently the Ohio State Chemist has been making wholesale raids among the grocers, and a leading journal in Cleveland undertook to give the public a warning, using the results attained by the chemist as a text. One of the items mentioned under the head of adulterations was vinegar, which the journal states is largely adulterated and dangerous to consumers. Several samples of the material were cited as containing "*acetic acid and water ;* in fact, some of the samples were *over half water*."

The best proof vinegar contains 5 per cent of acetic acid and 95 per cent of water carrying the normal constituents of the acetous fermentation of malt, cider or other material from which it is made, to the extent of one, or at the highest two per cent. The fact that acetic acid is the normal acid of vinegar is known, or should be known, to every schoolboy, but here is the reporter (and the editor who let his article pass) of a great and prosperous daily journal making a "scare" headline article over the finding of acetic acid in certain samples of the article tested by the State chemist.

The fact is, as remarked by a contemporary (*Drug, Paint and Oil Reporter*), that no term in the English language is more generally misunderstood, and more frequently misapplied, than the word "adulterated," as applied to food stuffs. The general impression, says the journal quoted, conveyed by it is that the adulterated article is pernicious, unwholesome, dangerous and unclean, while the reverse is more often the case. A wish to obtain an abnormal profit is the cause of all food adulteration, and the same cause would argue against the use of any ingredient that would render an article unwholesome or unpalatable. There is certainly no market for a food that is nauseating or deleterious, and the first thought of the manufacturer is to avoid offending the taste or injuring the health of the consumer. Over ninety per cent of adulterated food is non-injurious to health, and the cases that occasionally arise where danger, however remote, is incurred, are generally the results of gross ignorance or pure accident.—*National Druggist*.

INVENTIONS, SCIENCE, ETC.

CREOSOTING TIMBER.

The preservative properties of creosote in one form or other were understood and appreciated by the ancients, who are supposed to have employed it in the making of mummies, but pure creosote is thought to have been first obtained by Reichenbach from wood tar. The creosote employed for preserving timber is derived by the distillation of coal tar, in which it exists to the extent of from twenty-five to thirty per cent.

In the method of impregnating timber first adopted by Bethel, the timber was placed in drying houses, through which smoke and heated gases from furnaces were made to pass, and by which means the wood was much reduced in weight in the short space of ten or twelve hours. It was either soaked in hot creosote oil, or placed in iron cylinders, and the oil injected under pressures varying from 60 lbs. to 170 lbs. per square inch. Creosoting tanks are of all sizes, but those in more general use are cylindrical in form, about 6 ft. in diameter and 60 ft. to 80 ft. in length, constructed with wrought iron plates ⅝ inches in thickness, and capable of withstanding an internal pressure of from 150 lbs. to 250 lbs. per square inch. Tram rails are usually laid along the bottom of the cylinders, upon which small iron trucks run for facilitating the charging and drawing of the timber. One end of the cylinder is provided with a door, closed by screw dogs, which fits with a groove joint, so that the whole of the cylinder may be rendered air tight. The cylinder is usually placed over a tank or reservoir containing the oil, which is heated by means of steam pipes to a temperature of about 120 degrees Fahr., and the oil is maintained at this temperature during the whole of the process by similar pipes placed in the interior of the cylinder. Engines, boilers, air pumps, and force pumps of sufficient power to cause a good vacuum in the cylinder, and to put a maximum pressure of 170 lbs. per square inch on the oil when forcing it into the wood, as well as other minor appliances, form part of the necessary apparatus; but drying houses in connection with the process have for one reason or other been entirely dispensed with.

The types and sizes of plant for creosoting timber are so various that space will not permit of their being described in detail. They may yet be said to be merely identical in principle. After the timber is stacked in the cylinders in such a manner that the oil may get freely to all parts of its surface, the air pumps are set going, and a vacuum maintained in the cylinder until the moisture and sap are drawn out of the wood. The time for which the vacuum ought to be kept on will depend on the class of timber and its condition; it can consequently only be determined by experience. After the vacuum has been left on for a sufficient time the connection with the oil-store tank is opened, and the creosote rushes into the cylinder and nearly fills it. The valve controlling this supply is then closed, and the pressure pumps are started and kept going until the specified quantity of creosote has been injected into the timber. Upon the operation being completed the oil not absorbed by the timber is let into the store tank below, the cylinder door opened, and the timber withdrawn. The pressure pumps generally take their supply of oil from a separate tank from that used in filling the cylinders. This is of such a size and so arranged that the man in charge, by inspecting a guage, may ascertain how much oil has been forced into the tanks from the time when the cylinder was full, and by knowing the quantity of wood they contain he is able at once to determine when the specified quantity has been injected. Upon this point it is always well for the engineer to satisfy himself by weighing the whole or portions of the timber, both before and after treatment.

From what has been said it is evident that the time required for creosoting wood, the quantity of oil which can be forced into it, and the required amount of pressure per square inch, entirely depend upon its species, condition, and the purpose for which it is intended. On these points, therefore, no general laws can be laid down. Yellow pine, for instance, may with ease be impregnated with 12 lbs., and Baltic fir with 10 lbs. of creosote, whilst other timbers of a denser nature, such as pitch pine and oak, frequently cannot be made to take half these quantities. When pine and fir timbers are to be employed in sea works, English engineers are generally contented if it is creosoted with 10 lbs. of oil per cubic foot, but French engineers require it to be impregnated with 18½ lbs. per cubic foot. We incline to think that 15 lbs. per cubic foot injected evenly over the entire surface will prove amply sufficient in most marine situations. It must be understood that nothing like these quantities can be got into wet and improperly seasoned timber and unless the engineer believes in one or other of the many means of artificially seasoning timber, he ought to specify that only that which has been stacked for six months shall be allowed to be creosoted, and he should at the same time take care to see that his specification is carried out, and not allow timber to go straight from the quay to the tanks, as not infrequently happens with large timbers of varying sizes, such as those usually employed in marine works. Sleepers being of standard sizes, are produced in enormous quantities; consequently, with these there is not so much difficulty, as many firms always have a large number of seasoned sleepers in stock ready to undergo the process.

LIQUID FUEL FOR LOCOMOTIVES.

The occasional occurrence or danger of a "coal famine" has turned attention to the consideration of an available substitute for coal. The use of petroleum as fuel is no longer an experiment, and in the case of stationary boilers, especially, it has been attended with a good degree of success. Several considerations, however, that apply in the case of stationary plants are of less importance in the case of the locomotive.

The immediate reason for the substitution of oil for coal in factories, power stations, and the like, has been to avoid the nuisance of great volumes of smoke. Though in many instances the change has produced a perceptible economy, yet the expectation of this has rarely been the first cause of the substitution. It is not strange, therefore, in the case of locomotives, where the trouble occasioned by smoke is not so great, and is of a temporary or intermittent nature, that less attention was given to the practicability of using oil for fuel. That it can be so used, however, and under certain conditions with a certain degree of economy, has been amply proven, and, in addition, its use is evidently attended with a number of minor advantages, such as ease of firing and of maintaining a uniform steam pressure.

The principal question which has to be considered, and the feature which has counterbalanced the manifest advantage of liquid fuel is that of expense. The thermal units of coal as compared with petroleum are as 1 to 1½ or 1 to 2, according to the quality of the oil and coal in each particular instance. The expense of carrying and firing are decidedly in favor of the liquid, and to this may be added the advantage accruing from the nicety with which the fire may be regulated, and the much greater distance which a locomotive is able to run without taking on supplies.

The only point that needs consideration is, then, the actual relative cost upon the tender. This has been so much greater in the case of oil in this country as to be prohibitive of general use upon locomotives; but in other countries a saving of from fifteen to twenty per cent has been obtained from the use of petroleum.

LIGHT AND DARK WALL PAPER.

Every one knows that when the walls of a room are papered with a light paper it looks much more cheerful, but we hardly realize the great difference between dark and light papering. A scientist has now measured it in the following way, and has come to the following results. Suppose the room is covered with black cloth, and requires one hundred candles to give it a certain degree of light. If you take away the black cloth, and paper the room with dark brown paper, eighty-seven candles give the same amount of light. With blue paper seventy-two will do, with fresh yellow paint sixty candles give as much light, and with clean deal board walls, fifty candles are sufficient. But if the room be painted in white, fifteen candles make it as light as eighty-seven candles with the dark brown surroundings. The conclusion is evident. Not only is it bad for the eyes to have a sudden contrast of dark and light, but it is also much more expensive to light twelve candles where two or three are sufficient.

"PERSONAL MAGNETISM."

"There is one force which, when it travels in an easterly or westerly direction, is electric, and when it travels from north to south it is magnetic," said a lecturer on personal magnetism recently. "Every one who is harmoniously developed is electro-magnetic. They are well balanced. If one is exceedingly magnetic he is exceedingly sensitive; if very electric he is non-sensitive. Magnetic people are exceedingly personal in their relation to others; they draw you to them personally. They who are electric are more intellectual and draw you to them by what they say. One who is more electric deals with humanity at large rather than individuals. He cares more for ideas than the particular channel through which they flow.

"A person who is magnetic, cares more for the person than for race; more for the particular form in which it is clothed. Henry Ward Beecher drew people by his highly magnetic character. He attracted people by his personality. I grant that he preached magnificent sermons, but the great charm that lifted him above others was his personal magnetism. Moody and Talmage have it, though not of so high a type as Beecher. Wherever the crowd runs after a person, even in so great a man as Philip Brooks, you may know that individual's magnetism is exceptionally unfolded. The same words from some one else would be lacking in the subtle charm that attaches to them.

"The electric person is more likely to be judged coldly and critically from an intellectual standpoint. He does not get directly into your personal atmosphere, but addresses you intellectually from a distance. He addresses you all together, as a company of people, without caring more for one than another. In listening to a highly electric person you do not feel that sense of personal nearness you do with a highly magnetic person. With the magnetic one you feel that he cares for you individually. The magnetic ones are more easily wounded in their feelings, and therefore they suffer more in their family relations and in their friendships. An electric person can go out into the world and pass unscathed through temptation; but the magnetic person is more easily influenced. The electric temperament runs more to intellect, the magnetic to feeling. The perfectly balanced person is electro-magnetic."

A NEW FUEL.

FROM U. S. CONSULAR REPORTS.

The following is Maestracci's method of manufacturing petroleum bricks for fuel:

Mix one liter of petroleum, 150 grams triturated soap, 10 per cent of resin, and 333 grams of caustic soda. Heat this mixture, being careful to stir it well meantime, until solidification commences—say about forty minutes. If the mixture should tend to boil over, pour in a few more drops of the soda, and continue to stir until solidification has sufficiently progressed, then pour the semifluid material into moulds to form the bricks, and place these in a hot room or drying place for ten or fifteen minutes; then remove them and let them cool. In a few hours they can be used as fuel.

To the three elements which constitute the mixture, Mr. Maestracci recommends the addition of 20 per cent of sawdust and 20 per cent of clay or sand, which makes the bricks more solid and less expensive. Trials of these bricks as fuel have been made at Marseilles on several tugs, and it has been found that, weight for weight, they develop three times as much heat as the ordinary coal brick, and leave no ashes.

It is expected, with some slight changes in the furnaces, to arrive at still more perfect results, not only in the increased heat, but in the entire suppression of smoke, and on the most economical basis, one kilogram of the solidified material being equal to 4 kilograms of coal. These experiments seem to be very interesting, and it is quite easy to understand that there is a double advantage in using such fuel on steamers, as they economize in both space and cost.

C. W. CHANCELLOR,
HAVRE, *February 10, 1894.* *Consul.*

ACCIDENTAL INVENTIONS.

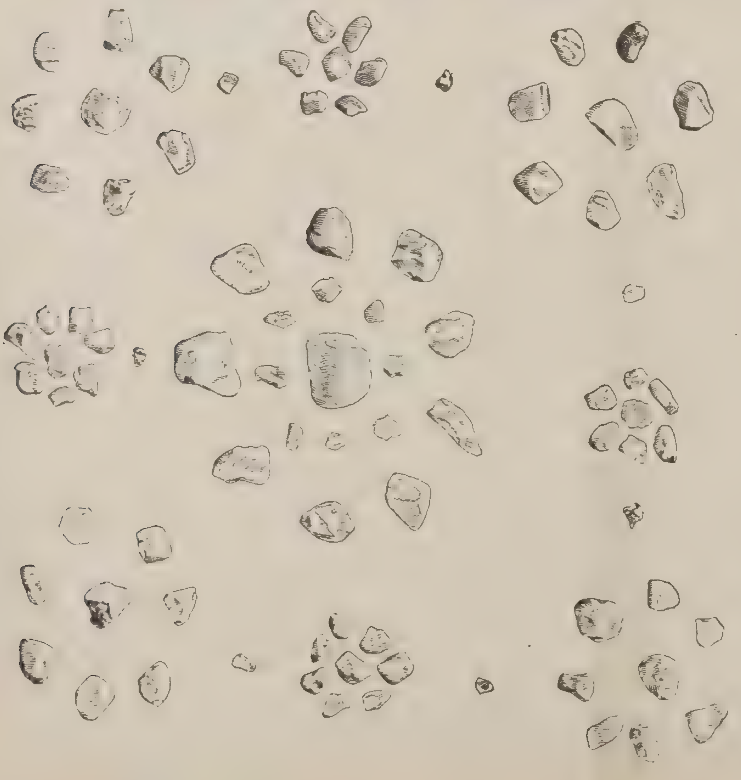
ONE OF THE VIRTUES OF THE DYNAMO WAS STUMBLED OVER.

Some of the most successful and remarkable engineering enterprises have been claimed to owe their existence to circumstances which, when considered in themselves, seem far too trivial to have produced such important results. Though opinions be divided as to the first transmission of power by electricity, for example, it has been strenuously maintained in some quarters that accident, pure and simple, was the cause of the great discovery, and an interesting story has been told for many years of the attending circumstances. This is to the effect that at the International Exhibition at Vienna in 1873 the Gramme Company exhibited two dynamo machines for plating purposes. One of these machines was in motion, and a workman who noticed that some cables were trailing on the ground thinking that they belonged to the second machine placed them in its terminals. To the surprise of everybody this second machine immediately began to turn, and it was then dis-

BUFFALO LITHIA WATER

A POWERFUL SOLVENT OF STONE IN THE BLADDER.

The following plate is from a photograph and represents the exact size and shape of Calculi passed by the Hon. T. J. Jarrett, ex-Mayor of Petersburg, Va., under the action of Buffalo Lithia Water.



The original stone shown in the cut together with one from a similar case, will be on exhibition at Ditman's Pharmacy, Astor House, Corner Broadway and Barclay Street, New York, from where water may be obtained.

Statement of Dr. John Herbert Claiborne, M. A., M. D., of Petersburg, Va., ex-Presiden and Honorary Fellow Medical Society of Virginia.

PETERSBURG, VA., Sept. 5, 1892.

E. C. LAIRD, Buffalo Lithia Sprnigs, Va.

My Dear Doctor:—I send by this mail a box of CALCULI, passed at various times within the last year by Hon. T. J. Jarrett, our former mayor, whilst drinking the BUFFALO LITHIA WATER. They give him but lttle pain now when passing. I have never critically examined the broken CALCULI, passed in such quantities from Mr. Jarrett's bladder, but am under the impression that the most of them were MANESIAN PHOSPHATES. There were specimens, however, which presented the appearance of OXYLATES, and, I remember, impressed me specially as being URIC ACID. I do not pretend to account for the mode of their solution by the Buffalo Lithia Water. There is nothing in its analysis which would warrant such results, but THE RESULTS ARE THERE, and seeing is believing. I can only suppose that in Nature's alembic there has been some subtle solvent evolved, too subtle to be caught by our coarse agents, which makes this wonderful disintegration. "There are many things in heaven and earth not dreamt of in our philosophy," and his is a short creed who believes only what he can prove or explain. Faithfully yours, JOHN HERBERT CLAIBORNE.

It is well known that stone in the bladder, for the most part Gout, Rheumatic Gout Rheumatism, and also various forms of Dyspepsia and Nervous prostration have a common origin, viz.: excess of uric acid in the blood. It is evident, then, from the foregoing statement, that this water must possess extraordinary potency alike in all of these maladies. In Bright's Disease of the kidneys it is well-nigh specific.

Water in cases of one dozen half-gallon bottles, $5.00, f. o. b. here, and for sale by all first-class druggists.

Illustrated 32-page pamphlet, giving further information, sent prepaid on application to

THOMAS F. GOODE, Proprietor,
BUFFALO LITHIA SPRINGS, VA.

covered that the first dynamo was driving the second. It would be strange, indeed, if there were not other versions of this story, and accordingly, we find several somewhat different accounts, from all of which, however, it would appear that the development of any measurable power in a machine taking its supply of electricity from a primary dynamo was wholly unexpected and correspondingly startling.

Closely analogous is the narrative of the origin of one of the most successful foundry blowers now in use, according to which the inventor was attempting to construct a water motor, which persistently refused to go round when the water was turned on. In the determination to learn what was wrong a belt connection was made with a line shaft so that the motion of the machine might be studied. By the same means a reverse motion was given to it, and the way in which it threw the water, and after the water had been exhausted, drove a current of air, suggested an entire change of purpose, and the machine was finished and put on the market as a blower instead of as a water motor, and thousands have been built since. The story, often told, with various modifications of detail, serves as an additional illustration of the fact that inventors frequently stumble upon success in entirely unexpected directions.—*Cassier's Magazine.*

NATURAL GAS.

The special report of the agent of the Government geological survey regarding natural gas is an interesting one. The three fields specially examined are in the States of Ohio, Pennsylvania and Indiana, and of these only Indiana is holding its own in the production of natural gas. In Ohio and Pennsylvania there has been a steady decrease since 1888. The Indiana gas fields embrace about 2,500 square miles of territory, and it is the only region where the supply of gas has not fallen below the demand, and this notwithstanding the fact that the gas supply in the State is being piped into adjacent territory outside of the limits of the State. Last year the gas from the Indiana fields brought $5,718,000, as against $4,716,000 in 1892, and during the year 5,720,000 feet of gas-pipe were laid.

The report shows that besides the three States mentioned, gas is found in commercial quantities in the States of New York, Illinois, Kansas, Missouri, West Virginia, Texas, Arkansas New Mexico, Utah, Tennessee and Wisconsin.

Of some of these fields little is known either as to extent or probable product. It is, however, reasonably well demonstrated that natural gas is by no means permanent, and that the pressure is reduced very shortly after tapping the source of supply. This is shown by the diminished product of Ohio and Pennsylvania and in portions of Indiana.

A SEARCH FOR LOST CLASSICS.

There is a chance that more lost classics may be discovered, this time in Moscow. When that city was ravaged by the Khan of the Crim Tartars in 1570, the library of Ivan the Terrible was hidden away, it is believed, in the vaults of the Kremlin. It has always been a tradition among Russian scholars that this library contained a vast number of Greek and Latin manuscripts, written on parchment, and once the property, as the booksellers would say, of the Byzantine Emperors. But the hiding place has never yet been discovered. According to the Moscow *Gazette*, another and more systematic search is now to be made, under the direction of the "illustrious scholar", M. Zabelize.

EFFECT OF THE TROLLEY ON WATCHES.

A great many men are wondering what is the matter with their watches. Never since the town was a town have there been so many pocket timepieces taken in for repairs. The trouble lies in the trolley. The introduction of the electric wire for propulsion, making the car stop and go fast or slow, affects the average watch in a similar manner, and fortunate is the man who gets off a trolley with his watch in the same condition that it was before. He may catch a train or reach bank in time to pay a bill, but it will be by town clock time, not his own. Every watch thus affected has to be demagnetized.—*Philadelphia Times.*

ANTS, BLACK AND RED.

We presume editors of newspapers have more inquiries for some remedy for the expulsion of ants than for almost anything else. The New York *Observer* has a correspondent who solves the problem as follows: "Having had years of torment with ants, both black and red, we lighted upon the following remedy, which with us has worked like magic: One spoonful of tartar emetic, one spoonful of sugar, mixed into a thin syrup. As it evaporates or is carried off, add ingredients as needed. A sicker lot of pests would be hard to find. Whether they impart the results to the home firm or whether all are killed, I trow not. Certain it is they do not pay us a second visit. For ants on the lawn, a spoonful of Paris Green cut with alcohol and made into a syrup with sugar and water can be placed on pieces of glass or crockery—cover from domestic pets—and the slaughter will be satisfactory."

DIOVIBURNIA UTERINE, TONIC, ANTISPASMODIC AND ANODYNE.

A reliable and trustworthy remedy for the relief of Dysmenorrhœa, Amenorrhœa, Menorrhagia, Leucorrhœa, Subinvolution, Threatened Abortion, Vomiting in Pregnancy and Chlorosis; directing its action to the uterine system as a general tonic and antispasmodic it is unexcelled.

FORMULA.—Every ounce represents 3-4 dram each of the fluid extracts: Viburnum Prunifolium, Viburnum Opulus, Dioscorea Villosa, Aletris Farinosa, Helonias Dioica, Mitchella Repens, Caulophyllum Thalictroides, Scutellaria Lateriflora.

ST. LOUIS, MO., June 23, 1888.

I have used DIOVIBURNIA enough to satisfy myself of its merits. It is of unquestionable benefit in painful dysmenorrhœa; it possesses antispasmodic properties which seem to be exerted especially on the uterus.

Dr. H. Tuholske

Professor of Surgery, Post-Graduate School.

ST. LOUIS, MO., June 18, 1888.

I have given DIOVIBURNIA a fair trial, and found it useful as an uterine tonic and antispasmodic, relieving the pains of dysmenorrhœa and a regulator of the entire uterine functions. I feel authorized to give this recomendation.

L. Ch. Boisliniere

Professor of Obstetrics, St. Louis Medical College

ST. LOUIS, MO., June 18, 1888.

For more than a year I have prescribed DIOVIBURNIA. In those cases that I have been able to follow up, found that they derived much benefit from its use in almost every form of dysmenorrhœa—especially the conjestive form. I am so pleased with it that I now prescribe it almost daily.

T. L. Papin M. D

Physician in Chief and Gynecologist to St. John's Hospital.

ST. LOUIS, MO., June 20, 1888.

I very cheerfully give my testimony to the virtues of a combination of vegetable remedies prepared by a well known and able pharmacist of this city and known as DIOVIBURNIA. I have employed this medicine in cases of dysmenorrhœa, suppression of the catamenia, and in excessive leucorrhœa, and have been much pleased with it. I do not think its claims (as set forth in the circular accompanying it) to be at all excessive.

Jno. B. Johnson

Professor of Principles and Practice of Medicine, St. Louis Medical College.

DOSE.—For adults, a dessertspoonful three times a day, after meals. In urgent cases, where there is much pain, dose may be given every hour or two, *always in hot water.* Put up in Eight Ounce Bottles.

To any Physician, unacquainted with the medicinal effect of Dioviburnia and Neurosine, we will mail pamphlets containing full information, suggestions, commendations of some of the most prominent professors in medicine and various methods of treatment. Or to those desiring to try Dioviburnia and Neurosine, and will pay express charges, we will send on application a trial bottle of each.

DIOS CHEMICAL COMPANY, ST. LOUIS, MO.

MAKING GARDEN.

Infinitely at variance as men may be in matters of politics, trade, and creed, in one regard they are just now happily unanimous. All are "making garden," or taking a mildly envious interest in this seasonable occupation of others. There seems to be an instinct in humanity for starting things to grow when the vernal currents stir in Nature's veins and we Americans, the seedsmen aver, manifest a steadily and rapidly increasing fondness for the gentle and refining delights of horticulture. That is all very well, but it would be good for us if we had more regard for other important springtime duties, which we might, also, attend to without neglecting our gardening. It may be confidently affirmed that there are a dozen persons who know a great deal about plants, for one who knows even a little about his own internal economy; a dozen who know much concerning the conditions required for successful cultivation of many different sorts of plants, where there is one who remembers—if he ever knew—some of the most essential things for the promotion and conservation of his own health. This, it should not be forgotten, is not only the season in which the ferments of quickening vitality in the earth impel new vigor in plants, but that in which kindred forces thrill all animal life with greater activity, impelling more rapid processes, either for regeneration and growth, or destruction and decay, as direction may be given to their energy. As a rule, during the sluggish season of winter, men store up in themselves, by their self-indulgences and lack of care for sanitary conditions, abundant seeds of trouble which the vernal impulses cause to germinate. Just about the time when the seedlings are peering out of the ground in the garden, the germs scattered through our tissues begin showing themselves on the surface, as pimples, pustules, and "spring boils." But from the moment of their appearance there is between the two products this radical difference, that neglect, which will be the death of the former, assures the growth and development of the latter.

The common error that such cutaneous disorders are mere temporary disfigurements, inevitable concomitants of spring, which will soon "go away of themselves" or yield to some local "top-dressing," is a most pernicious one. The body diversified with them may be likened to a thrifty, well-spawned mushroom-bed. Remove all the fungii that appear on the surface, if you will, but more will continue to come, because the roots from which they spring pervade the entire mass, and not until the roots are killed out will the crop cease. And the simile may be carried farther. Some experienced horticulturists aver that when the first type of fungii disappear, their places are apt to be filled by a spontaneous growth of very poisonous quality. And so it is with the body. Those breakings-out, annoying but comparatively harmless in themselves, are sure to be followed by infinitely more serious ailments, disorders of the vital organs, productive of much suffering and even endangering life. The reason therefor is easy of comprehension. The seeds of those eruptions in the skin are molecular deposits of foreign and effete matter in the blood, irritating the tissues to which they are carried, vitiating the nutritive properties of the life current, and often acting as mechanical estoppages to the normal action of vital organs, as when, taking the form of fibrin, they clog the valves of the heart or form embolismic clots in the brain. Hence, prudent common sense will dictate the adoption of radical measures at once. for the removal of the causes of those apparently trivial blemishes, which are really very serious warnings. An efficient blood purifier, technically known as an "alterative,"is needed, and the most reliable is the standard preparation put up by J. C. Ayer & Co., of Lowell, Mass., and known as their "Compound Extract of Sarsaparilla." It contains, in addition to the active principles of the drug from which it takes its name, the potencies of stillingia, yellow dock, mandrake, and the iodide of potassium, thus combining the most efficient mineral and vegetable alteratives known to the pharmacopœia, and its virtues are so well established in scientific regard that it is the only proprietary medicine which was allowed to be placed upon exhibition at the Chicago World's Fair, all others being, by their judicial exclusion, practically branded as valueless nostrums.

◆

A little story of Marshall Wilder's I sometimes use as a therapeutic agent: "Two frogs fell into a pail of milk. One exclaimed: 'Help! Help! I sink! I drown!' The other answered gruffly: 'Kick! Kick! you little idiot! Something will surely happen.' The first one continued to gasp and moan, and finally sank out of sight. The other kicked and kicked until nearly morning, when the milk having been churned to butter, he walked out into dry land."

◆

BEWARE OF OINTMENTS FOR CATARRH THAT CONTAIN MERCURY

as mercury will surely destroy the sense of smell and completely derange the whole system when entering it through the mucous surfaces. Such articles should never be used except on prescriptions from reputable physicians, as the damage they will do is ten fold to the good you can possibly derive from them. Hall's Catarrh Cure manufactured by F. J. Cheney & Co., Toledo, O., contains no mercury, and is taken internally, acting directly upon the blood and mucous surfaces of the system. In buying Hall's Catarrh Cure be sure you get the genuine. It is taken internally, and made in Toledo, Ohio, by F. J. Cheney & Co. Testimonials free.

☞ Sold by Druggists, price 75c. per bottle.

Sailing Away,

both of them for pleasure,—with the chances for safety in favor of the washboard. In fact, there isn't much chance for safety until it's gone. If you don't want your clothes rubbed to pieces —throw it away. Use **Pearline.** That **washes without harm.** The washboard wears out while it's getting things clean. It's **rub** and **wear** without **Pearline.** It's hard work, too. **Pearline** takes away the rubbing and the work. No use for either, it **takes away the dirt** easily, quickly, cheaply.

Send it Back Peddlers and some unscrupulous grocers will tell you "this is as good as" or "the same as Pearline." IT'S FALSE—Pearline is never peddled, and if your grocer sends you something in place of Pearline, do the honest thing—*send it back.*

380

JAMES PYLE, New York.

Indigestion

Horsford's Acid Phosphate

Is the most effective and agreeable remedy in existence for preventing indigestion, and relieving those diseases arising from a disordered stomach.

Dr. W. W. Gardner, Springfield, Mass., says: "I value it as an excellent preventative of indigestion, and a pleasant ascidulated drink when properly diluted with water and sweetened."

Descriptive Pamphlet free.

Rumford Chemical Works, Providence, R. I.

Beware of Substitutes and Imitations.

For Sale by all Druggists.

LARD SUBSTITUTES.

In a preceding number we published an article under this heading which had been taken from *Household News*, but was emasculated by some one before it reached us, thus materially altering the author's sense. We, therefore, reprint the article as it should have been:

Lard substitutes have become a necessity by virtue of that law in life that fixes nearly every earthly thing—supply and demand. The supply of lard is no longer what it ought to be, either in quality or quantity; and improved knowledge and taste demand something better than lard for many purposes, where formerly it was the only thing used. A great deal of lard has had the oil taken out of it and sold for illuminating purposes, to railroads, etc., and the lard that is left is the hard, white stuff that you sometimes see in the shop windows, in nice, dry (not greasy) vessels lying on their sides, the lard surface bedecked with scalloped paper and cranberry figures, and it hardly melts even when the sun shines on it! When do you think it will melt in your stomach? Good lard will run or melt on a pleasantly warm day. This trick of taking the oil out of lard is limited to *some* manufacturers. The farmers can't do it; their business is not extensive enough. There are large quantities of first-class lard constantly turned out by the manufacturers, but it behooves the consumer to see to it that he gets it. There is also a way of adding large quantities of water to lard. The cook knows when she gets this sort; it spatters all over the stove when used in frying. The farmers that come to Philadelphia markets bring very good lard, as a rule. On the other hand, when lard is used in making pastry and other similar mixes, it leaves a peculiar taste of its own that people now-a-days don't like (though probably their grandmothers fed them on it three times a day, in their young days), and so, altogether, there is a demand for something more reliable and something better than lard. Cotton-seed oil comes the nearest to supplying this demand. But for many reasons it has been found advisable to mix with the oil some animal fat substance, usually derived from beef fat. Such combinations are both healthful and economical, and are now being largely used in place of lard. (Why don't the farmers *squeal* about this hurting their business, and appeal to the legislatures, Congress, etc, There would be about as much wisdom in it as there was in the oleo *bellow*!) The names of these lard substitutes indicate that there is no secret about the bulk of their ingredients. Take, for instance, Fairbank's *Cottolene*, now a well-established product on the market, or Swift's *Cotosuet*. Both of these are largely made up of cottonseed oil. They are healthful, cheap, and easily digested, as fats go. They are better than lard for those people who are peculiarly sensitive to lard in their digestive apparatus. Some of these days our California and Southern friends will provide olive oil cheap enough for some cooking purposes. But this is one of the pleasures in store for our future generations, to make up for the weak digestions we shall entail to them.

A TYPOGRAPHICAL ERROR.

Through a typographical error in our issue of June 1st, the name of the corporation who manufacture Dr. J. C. Ayer's preparations was given as J. E. Ayer & Co. It should have been J. C. Ayer & Co. Fortunately this firm has been so long and favorably known that a slight error in an initial does not make much difference, yet we wish to be right and correct.

LITERARY NOTICES.

PROGRESS IN FLYING MACHINES.

BY O. CHANUTE, C. E.

This book gives an historical review of the effects and experiments of inventors to accomplish flight with apparatus, which by reason of its rapid movement will be supported by the air as birds are. The author has gathered all the records of such experiments, which were accessible, and has endeavored to show the reasons for their failure, and to explain the principles which govern flight, and to satisfy himself and his readers whether we may reasonably hope eventually to fly through the air. His conclusion is that this question may now be answered in the affirmative. A full account is given of the recent experiments of scientists like Maxim, Lilienthal, Hargraves, and Langley, which have so greatly added to our knowledge of this subject. The book is illustrated by nearly 100 engravings, and is written in a style which will be read with as much interest by the general as by the non-technical reader. Price $2.50. Published by *The American Engineer and Railroad Journal*, 47 Cedar Street, New York.

THE ARENA.

The June number of the *Arena* is notable for several articles of conspicuous ability, interest, and value. It most auspiciously begins Volume X of a review which fills a unique place in contemporary literature as a serious and independent organ of the best and highest thought on all matters of contemporary interest and discussion. While we do not by any means agree with the opinions generally expressed by the various brilliant writers in this magazine, we nevertheless find a vast array of instructive and entertaining thought in its pages. It is, of course, intended for those who are able to think for themselves, and are not led hither and thither by what they read.

◆

The readers of *Household News* have a rich treat before them in the June number. It is somewhat of a satisfaction to simply read of the delicious dishes one can get out of the strawberry, cherry, rhubarb, and hosts of things in daily use on our tables—but to taste them—to feast on them—that must be bliss indeed.

This is only one department, too. The others are rich in good material, besides special articles from prominent people.

All along the line of the various departments can be seen the marked improvement that is making *Household News* such a welcome and valuable visitor.

Published in Philadelphia by Household News Co., limited. They are free with their sample copies; send for one.

◆

Palace Car Porter (out west)—"Don' gub me no fee, sah, till we gets to de end of de trip."

Book Agent—"Very well. Just as you prefer."

Porter—"Yes, sah. You see, dese train robbers always goes for me fust, an' ef I ain' got nuffin, dey say de passengers ain't got nuffiin an' goes off."

"I am so happy," she said. "Ever since my engagement the whole world seems different. I do not seem to be in dull prosaic Boston, but in—"

"Lapland!" suggested the smaller brother.

"40 Years Without a Stomach"

was Carlyle's expression of the experience of many people who reach middle life before their digestive organs loudly protest against improper food. The first warning generally comes from food cooked with lard. How often we hear the remark, "I like it, but dare not eat it." To any-one in this common condition

Cottolene

the new vegetable shortening, is indeed a boon. By the use of this new and wonderful food-product the disagreeable effects of lard-cooked food are altogether avoided. The features of economy, convenience and adaptability, emphasize the above, and demand the attention of careful housekeepers to COTTOLENE.

THE AMERICAN COTTON OIL CO

Sold in 3 and 5 pound pails by all grocers Made only by
The
N.K. Fairbank Company,
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Boston, Philadelphia, Montreal,
San Francisco, &c.

50 YRS. THE ORIGINAL CORN STARCH. 50 YRS.

SOLD ALL AROUND THE WORLD.

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PUREST STRONGEST BEST

Highest Awards

CHICAGO, 1893. PHILADELPHIA, 1876. LONDON. 1851.

Try "SILVER GLOSS."

T. KINGSFORD & SON. Manufacturers. OSWEGO, N.Y. U.S.A.

BEST QUALITY IS GOOD ECONOMY.

THE STANDARD OF EXCELLENCE FOR OVER FIFTY YEARS.

BUSINESS NOTES.

A HANDY PREPARATION.

William R. Warner & Co., of Philadelphia, manufacture a valuable preparation of lithia in tablet form, which are effervescent. They are diuretic and antacid; each tablet containing three grains Citrate Lithia. It is an elegant, portable, and effectual remedy in Gout, Rheumatism, Gravel, Stone in the Bladder, Eczema, Bright's Disease, etc.

One tablet dissolved in a glass of pure water makes a Lithia water of definite strength.

NEUROSINE.

New Haven, Conn.,
March 17, 1894.

Dios Chemical Co., St. Louis.—I have used Neurosine in a case of sleeplessness and obtained results certainly the best I ever had in so short a time. The patient, an aged man, had suffered for many years. It has also relieved his irritableness of temper. Thomas Cril, M.D.

AYER'S SARSAPARILLA NOT A NOSTRUM.

Rule 15, which governed the admission of exhibits at the World's Fair, was hard on some of the manufacturers of so-called blood-purifiers, but the result—which proved the wisdom of the rule—was that Ayer's was the only Sarsaparilla admitted. All other similar preparations were classed as patent medicines or secret nostrums, and thrown out.

DELIGHTFULLY COOL AND REFRESHING.

Horsford's Acid Phosphate,
with icewater and sugar.

Dr. A. Trau, Philadelphia, Pa., says: "I have extensively used it in nervous prostration and kindred affections, and invariably obtained very good results."

MISCELLANEOUS.

THE SALMON OF ALASKA.

"It is not generally realized," said Walter C. Elliot of Portland, Ore., "that the salmon fisheries of Alaska are in some respects more important than the seal fisheries, which have caused so much international argument. Five or six thousand men are now employed in our extreme northwestern territory in the salmon business, and nearly a million cases of salmon are canned every year. The only difficulty is the utter recklessness of some of those engaged in the work. Under ordinary conditions the salmon in Alaska rivers ought to hold out for hundreds of years without causing any apprehension. As it is, however, methods are adopted of destroying the salmon at wholesale, and thousands are killed every month in excess of the number that can be handled profitably. The most unsportsman-like methods are adopted, including seining, dynamiting, and other illegal as well as unjustifiable money-saving plans. If more Americans visited Alaska public opinion would be sufficient to put a stop to these practices, but as it is more stringent legislation is needed."

◆

Ceilings that have been smoked by a kerosene a lamp may be cleaned by washing with water in which soda has been dissolved—the proportion is not important.

Sick and Nervous Headache
SPEEDILY RELIEVED BY
WARNER & CO.'S EFFERVESCING
BROMO
(WARNER & CO.)
SODA
—USEFUL IN—
Nervous Headache, Sleeplessness, Excessive Study,
Acute Migraene, Nervous Debility, Mania, etc.

—DOSE—

A heaping teaspoonful in half a glass of water, to be repeated once after an interval of thirty minutes, if necessary.

It is claimed by prominent specialists in nervous diseases, that the Bromide Sodium is more acceptable to the stomach than the Bromide Potassium. An almost certain relief is obtained by the administration of this Effervescing Salt It is used with advantage in Indigestion, the depression following alcoholic and other excesses, as well as nervous headaches. It affords speedy relief in mental and physical exhaustion.

Prepared by WILLIAM R. WARNER & CO., Philadelphia and New York.
Sold by Leading Druggists.

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JULY 1, 1894.

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WHAT ARE THE FACTS?

Facts, that are proven, are more convincing than mere assertions, no matter by whom made. We have for some time back been writing on the subject of oleomargarine. We have considered the question of its wholesomeness, and we are sure we have satisfied the reader that well-made oleomargarine is a wholesome and economical substitute for butter, and that it is superior to the great bulk of the so-called butter sold. We have equally well explained the motive of certain Senators and Congressmen for advocating hostile measures against it. In this number we present the clear and lucid statement of the chief chemist of the United States Department of Agriculture as to the nature and wholesomeness of oleomargarine. It must be remembered that Professor Wiley is the bitter foe of all adulteration of foods, and therefore his opinion of oleomargarine should bear great weight with the public. We submit it without comment, as we are convinced that no stronger evidence could be offered.

OLEOMARGARINE AND VEGETABLE LARD.

CAN THEY BE JUSTLY CONSIDERED ADULTERATIONS.

From a lecture delivered before the Franklin Institute by H. W. Wiley, Chemist of the U. S. Department of Agriculture.

As a distinction between a pure and an adulterated article, take the cases of butter and oleomargarine. Pure butter, for instance, must be clean, sweet, wholesome and made of the fat of cow's milk, and must contain only a certain proportion of water, curd and salt. Oleomargarine may be as sweet, clean and wholesome as the butter mentioned above, yet when sold as butter it is clearly not pure food, but a spurious article.

Again, when the housewife buys lard it is supposed that the article she obtains has been made from the fat of healthy, freshly slaughtered hogs, carefully selected and cleaned and rendered in clean kettles or tanks. Cotton-seed oil and beef tallow, in respect of cleanliness, nutritive properties and wholesomeness, may equal and even excel pure lard, but the admixture of these articles with hog's lard, or their sale as such, without the knowledge of consumers, is clearly a fraud and an adulteration.

Butter.—In regard to butter, the character of adulteration is well known. The use of oleomargarine as a butter substitute has been practiced for many years. The oleomargarine law, which imposes a tax of two cents a pound on the manufactured product, has not helped to restrict its use, but has rather increased it by giving to the consumer a guarantee of purity. The amount of tax collected on manufactured oleomargarine for the fiscal year ending June 30, 1892, was $945,675, which shows that there were 47,283,750 pounds of oleomargarine manufactured in the United States in twelve months.

The number of retail dealers in oleomargarine increased during the year more than 22 per cent. over the preceding year. The amount of tax paid by retail dealers for the fiscal year ending June 30, 1891, was $146,293.70, and for the fiscal year ending June 30, 1892, $204,215.

The increase in the number of wholesale dealers was nearly 100 per cent. The amount of tax paid by wholesale dealers for the fiscal year ending June 30, 1891, was $53,191, and for the fiscal year ending June 30, 1892, $106,036.

There can be no reasonable objection to the use of oleomargarine; it is clean, wholesome and digestible. When it is to be kept for a long time before use, as on shipboard or in distant mining camps, it is preferable to butter, because it has but little tendency to become rancid.

Lard.—For similar reasons there can be no possible objection to the use of cotton seed oil as a substitute for lard or when mixed with lard, provided it be sold for what it is. Most of you are familiar with the great fight which was made against the use of the term "pure refined lard," which was the trade name of a mixture of lard stearine with cotton seed oil. "Pure refined lard," it was claimed, was a term which had been used so long to designate the mixed product that it had become in reality a trade mark, and was, therefore, entitled to respect and protection. In the investigation which was held before the Congressional committees, it appeared that as to the trade the contention was quite justifiable. Goods sold under that name were understood to be mixed. When, however, the mixed product was offered to the consumer, it was purchased with the idea which the name naturally implied, that an extra fine quality of hog's lard was secured.

All attempts to pass a pure lard bill, modeled on the oleomargarine act, have heretofore failed in Congress, but several of the States have prohibited the sale of mixed lard, except when offered under the proper name. Manufacturers have, therefore, been gradually forced to abandon the term "refined lard" when applied to this commodity.

I am of the opinion that many persons would prefer a cooking fat largely of vegetable origin, to a pure animal product. To me, it seems that some State legislatures have taken a reprehensible course in prohibiting the sale of vegetable oils as a substitute for lard for cooking. The grower of hogs undoubtedly has a right to contend against the sale of vegetable oils as hog fat, but when he pushes his claim still further, and demands that the markets be closed to products as pure and nutritious as his own, he passes beyond the bounds of public support. Every person in the United States who prefers cotton oil to lard, should be allowed to purchase his supplies without let or hindrance. Every grower and maker of pure lard has the right to an equally open market from which every adulterated and mixed lard offered as pure should be rigidly excluded.

For a time, a few years ago, when a popular fad prevailed in favor of nitrogenous foods, the true value of fats to the digestive and nutritive economy was not well appreciated. At the present day this is all changed, and we know how to value a fat properly.

It is, therefore, a matter of no mean importance to protect the public in the use of olive oil instead of cotton oil, of cotton oil instead of lard, and lard instead of a mixture of beef and cotton oil stearine. It is true that cotton oil, when carefully refined, is almost as good a salad dressing as olive oil, but it is very much cheaper, and those who prefer to pay the high price should be secured against fraud. In respect of wholesomeness and digestibility, it would be hard to choose wisely between the two.

One of the great difficulties in securing the enactment of a national pure food bill has been the feeling in cotton-growing regions that such a bill would restrict the market for cotton oil. This is true, if the fraudulent market is meant. By that I mean the surreptitious sale of cotton oil as olive oil and as lard. But such a bill would not interfere in the least with the legitimate market for the product. Cotton oil, as a food, has such merit of its own as to warrant the belief that it does not require any smuggling to secure for it a wide and rapidly increasing use. The South as well as the North would be the gainer from honest markets for honest foods, and it is a short-sighted policy that leads to a crusade against such legislation as will secure the desired result. It would be a rather unfortunate thing for the whole country should an irrepressible conflict between the *sus* and the *gossypium* keep our interstate market forever open to mixed or doubtable fats.

WHAT LARD IS.

BY H. W. WILEY, CHEMIST TO THE U. S. DEPARTMENT OF AGRICULTURE.

Butcher's Lard.—The small quantities of lard made by butchers are usually "kettle rendered," after the manner practiced by small farmers in making lard for home consumption. Often the scraps are saved up for a considerable length of time by the butchers before rendering, and that is likely to increase the free acid present. This lard is also frequently dark colored, and contains a considerable quantity of glue. In New York this lard is known as "New York City Lard."

Compound Lard.—The term refined lard had long been used to designate a lard composed chiefly of cotton oil and stearine. The largest manufacturers of this kind of lard have now abandoned this term and are using the label "lard compound" instead. This is but just to the consumers of this article, who are likely to be misled by the term refined lard. The prime steam lard in a state of fusion, the stearine also in a liquid condition, and the refined cotton oil are measured in the proportions to be used and placed in a tank at a temperature of 120 deg. to 160 deg. F.

In this tank the ingredients are thoroughly mixed by means of paddles operated by machinery. After mixing, the compound lard passes at once to artificial coolers, where it is chilled as soon as possible. It is thence run directly into small tin cans or large packages, and prepared for market.

PHYSICAL PROPERTIES OF PURE LARD.

(The degrees of temperature referred to herein are Centigrade.)

Specific Gravity.—The specific gravity of a pure lard varies rapidly with the temperature. It is not convenient to take the specific gravity of a lard at a lower temperature than 35 deg. or 40 deg., inasmuch as below that temperature solidification is apt to begin. The specific gravity, therefore, is usually taken at 35 deg. or 40 deg., or at the temperature of boiling water, viz., 100 deg. At 40 deg. the specific gravity of pure lard is about .890, and at 100 deg. about .860 referred to water at 4 deg. The specific gravity of pure lard does not differ greatly from that of many of the substances used in adulterating it, but it is distinctly lower than the cotton oil, and is of great distinctive value in analysis.

Melting Point.—The melting point of a pure lard is a physical characteristic of great value. The melting point of the fat of the swine varies with the part of the body from which it is taken. The fat from the foot of the swine appears to have the least melting point, viz., 35. deg. The intestinal fat seems to have the highest, viz., 44 deg. In fat derived from the head of the animal the melting point is found to be 35.5 deg,, while kidney fat of the same shows a melting point of 42.5 deg.

In steam lards, representing the lards passed by the Chicago Board of Trade, the melting point for ten samples was found to vary between 29.8degs. and 43.9 degs. In general it may be said that the melting point of steam lards is about 37 deg., which is the mean of the ten samples examined. In pure lards derived from other localities the melting point was also found to vary. A sample of lard from Deerfoot Farm, Southborough, Mass., was found to have a melting point of 44.9 degs., while a pure lard from Sperry and Barnes, New Haven, Conn., melted at 39 deg. The mean for eighteen samples was 40.7 degs.

While the melting point cannot be taken as a certain indication of the purity of a lard, nevertheless a wide variation from 40 degs. in the melting point of a lard should lead at least to a suspicion of its genuineness, or that it was made from some special part of the animal. Perhaps one reason why the melting point has not been more highly regarded by analysts is because of the unsatisfactory method of determining it; but when it is ascertained by the method used in these investigations it becomes a characteristic of great value.

Color Reaction.—The coloration produced on pure lard by certain reagents serves as a valuable diagnostic sign in the analysis of lard and its adulterations. Various reagents have been employed for the production of characteristic colors in fats, but of these only two are of essential importance. They are sulphuric and nitric acids. Pure lard when mixed with sulphuric and nitric acids of the proper density, as indicated hereafter, gives only a slight color, which varies from light pink to faint brown.

The variation produced in the colours by pure lards is doubtless due to the presence in various quantities of certain tissues of the animal other than fat. For instance, a variation in the amount of gelatinous substance mechanically entangled with the lard, or of the tissues composing the cells in which the lard was originally contained would be entirely sufficient to account for the slight differences in color produced by lards of known purity. It might, therefore, be difficult to distinguish accurately between a pure lard containing a considerable amount of other tissues from the animal, and one which contains a small amount of adulteration.

The coloration produced, therefore, by the acids named should not be relied upon wholly in distinguishing pure and adulterated lards, but the character of such coloration should be carefully noted in the analyst's book. In the steam lards examined some of the remarks describing the coloration produced are as follows: "Trace of colour," "faint pink," "bright pink," "light red," "yellowish," etc. For pure lards of miscellaneous origin some of the descriptions are as follows: "Brownish-pink," "trace of yellow," "marked-red-brown," "no colour," "slight coloration," etc.

There are many other hog fat products not used in the manufacture of lard or compound lard, a description of which may prove useful here.

White Grease.—This grease is made chiefly from hogs which die in transit, by being smothered or frozen. Formerly it was also made from animals dead of disease, but this has been diminished on account of certain State laws requiring the carcases of hogs which have died of cholera to be buried. This grease is made from the whole animal with the exception of the intestines. The latter are rendered separately and made "brown grease." The rendering is done in closed tanks at a high pressure. The residue is used in the manufacture of fertilizer. White and brown grease are used chiefly in the manufacture of low grade lard oils and soap.

Yellow Grease.—Yellow is made by packers. All the refuse materials of the packing houses go into the yellow grease tank, together with any hogs which may die on the packers' hands. Yellow grease is intermediate in value between white and brown. It is used for the same purposes.

Pig's Foot Grease.—This grease is obtained chiefly from the glue factories, and is used for making lard oils and soap.

Stearine.—The stearines are the more solid portions of the animal fats remaining after the more fluid portions have been removed by pressure. The stearines used in the manufacture of compound lard are lard stearine, derived from lard, and oleo-stearine, derived from a certain quality of beef tallow. Cotton oil stearine is used chiefly in the manufacture of butterine.

Lard Stearine.—The lard stearine used in compound lard is made as follows: The prime steam lard, if properly crystalized and of the right temperature (from 45 to 55 degs. F., winter; 55 to 65 degs. F., summer), is sent at once to the presses. If not properly grained it is melted and kept in a crystalizing room at 50 to 60 degs. F. until the proper grain is formed. The lard is then wrapped in cakes with cloth, each cake containing 10 to 20 pounds. The cakes are then placed in a large press, with suitable septa to facilitate the egress of the oil. These presses are sometimes 40 to 50 feet in length, and when first filled 12 to 18 feet high. The pressure is applied very gradually at first by means of a lever working a capstan, about which the chain is wrapped, attached to the upper movable part of the press.

The oil expressed-prime or extra lard oil, is uesd for illuminating and lubricating purposes. The resulting stearine is used for making compound lard, and is worth more than the lard. It has about 5 per cent free fatty acid (less than the lard oil), and crystallizes in long needles, making the texture tough.

Oleo-Stearine.—This product is made chiefly from the caul fat of beeves. This fat is rendered in open kettles at a low temperature. The resulting tallow is placed in cars in a granulating room, where it is allowed to remain for 36 to 48 hours at a temperature of 80 to 90 degs. F. The centents of the cars are then mixed and placed on a revolving table, where they are made into cakes. These are wrapped with strong cotton cloth and placed in a strong press, where a pressure of 90 degs. F., becoming very strong at the end, is applied for one or two hours. The expressed oil, known as oleo-oil, is used in the manufacture of butterine. The stearine is removed from the press as white, hard cakes, and is used for adulterating lard. The oil is sometimes filtered with a small percentage of Fuller's earth to improve its color and brightness.

Mutton Tallow.—A fine article of mutton tallow is also sometimes used in lard, but the objection to the flavor is sufficient to limit itsuse to a small amount.

Animals and Great Cold.—Pictet, the French chemist, finds by subjecting animals and insects to the intense cold obtainable from liquefied atmospheric air, that animals show a wonderful power of resistance to its effects. A dog placed in a copper receiver at a temperature of —60 deg. to —90 deg. centigrade, showed a rise of bodily temperature of 0.5 deg. in ten minutes, and after an hour and a half had only lost 1deg. A little later, however, nature gave up the struggle, the temperature fell rapidly, and the animal died suddenly. Insects resist a temperature of —28deg. but not —35 deg., while myriapods live down to —50 deg. and snails to —130 deg. Bird's eggs lose their vitality at —2 deg. to —3 deg.; ant's eggs at 0 deg. Infusoria die at —90 deg., while bacteria are still virulent at —213 deg. This last fact is, perhaps, the most significant of all.

HOUSEHOLD.

TESTED RECEIPTS.

FROZEN FRUITS.

The prepared fruit is simply put in the can minus the beaters. The can is surrounded with *ice* and *salt* and left without stirring, until the fruit is chilled. It takes about an hour.

Berries of all kinds should be hulled or stemmed. picked over and sprinkled with fine sugar.

Bananas should be peeled, sliced thinly, and sprinkled with sugar and lemon juice. A speck of salt and cinnamon mixed with the sugar is a great improvement.

Pineapples should have the outer rind and eyes removed and the soft part cut in small cubes and sweetened to taste.

Tomatoes. Pell, cut in quarters and sprinkle with salt and sugar.

LEMON SHERBET.

Four lemons, pint of sugar, one quart boiling water. Shave off the peel from two lemons in thin wafer-like parings being careful to take some of the lighter colored rind below the oil cells. Put the parings into a bowl, add the boiling water and let it stand ten minutes closely covered. Cut the lemons in halves, remove the seeds, squeeze out the juice and add with the sugar to the water. Add more sugar if needed. When cold strain through a fine strainer into the can and freeze.

LEMON GINGER SHERBET.

Cut five ounces of candied ginger in fine pieces, and steep it with the lemon and proceed as directed above.

PINEAPPLE SHERBET.

One pint of fresh pineapple, one pint sugar, one pint water, one tablespoonful gelatine, one lemon. Pare the pineapple, remove all the eyes and pick off the tender part with a fork. If still too coarse, chop a little. Add the sugar, water, lemon juice, and gelatine, which should be first soaked in cold water, and then dissolve in boiling water. Freeze as usual.

FROZEN COFFEE.

Prepare two quarts of strong clear coffee and sweeten to taste. When cold put in the freezer and turn the crank until like soft mush.

FROZEN TEA.

Prepare one quart of tea, sweeten to taste and when cold add a little lemon juice. Freeze until mushy.

SUMMER SNOW.

Soak a package of gelatine in a cup of cold water, and add to this two cups powdered sugar, juice and peel of a lemon, half a pine-apple cut in small pieces and a little nutmeg. Let them stand together two hours. When you have bruised the fruit with the back of a silver spoon and stirred all thoroughly, pour over them, at the end of that time, two cups boiling water, and stir until the gelatine is dissolved. Strain through a coarse flannel, squeezing and wringing hard. When almost cold, put in one glass best brandy, and two glasses best sherry or white wine. Cover until quite cold. Whip in by degrees, into the beaten whites of four eggs. It ought to be whisked half an hour. Put into a mould that has been wet with cold water and bury in ice to form.

SWEET PICKLED CANTELOPES.

Cut and peel the fruit in five or six pieces, taking out the seeds. Put them in a jar, cover with vinegar in which let them stand a day or two. Then throw away one quart of the vinegar, measure the remainder, and to each quart of the vinegar add three pounds of sugar. When dissolved put it over the fire with half an ounce of whole cloves, half an ounce of mace and one ounce of cinnamon, add the melon and boil until well cooked. Then take the fruit out and spread on a dish. Boil the syrup until rich and pour over them. When cold tie up in jars.

BLUEBERRY SHORTCAKE.

One and a half cups of butter, one cup of sugar two eggs, one cup sweet milk, three and one half cups of flour, two tablespoonfuls baking powder, one pint berries. Serve with cream and sugar.

CORN FRITTERS.

One pint grated corn, half tea-cup full milk, half tea-cup full flour, one small teaspoonful baking powder, one tablespoonful butter, two eggs, one teaspoonful salt, a little pepper. Fry in hot lard.

PICALILLI.

One peck tomatoes, four green peppers, six onions, one cup of sugar, one pint vinegar, one cup grated horseradish, one teaspoonful each of cloves, allspice, cinnamon, salt. Cook until soft. Seal in glass.

GREEN TOMATO SOY.

Two gallons fruit sliced without peeling, one quart onions sliced, two large carrots sliced, two quarts vinegar, two tablespoonfuls ground pepper, one of mustard, one of allspice, three of cinnamon, four of mustard seeds, half a tablespoonful each of cloves and whole black pepper, one pound brown sugar. Cook until there is no raw taste.

CLEANSING SOILED CLOTHING.

The old saw, "Where ignorance is bliss," etc., is sometimes called into service by those who attempt to criticise the agitation of the vital subjects, hygiene and prevention of disease. As it appears, they would obstruct advance in enlightenment and keep people blindly unconscious of the dangers to health, which many are continually encountering, for the simple reason that a knowledge of such would detract from their pleasures. Fortunately, there are but few in the world who give expression to such sentiments—so wholly devoid of sense or reason.

We are told that the highest happiness of a man is in the performance of what he believes to be his religious duty. Surely, even the most thoughtless must feel that the returns from obedience to personal duty as pertains to health, if we can make a distinction, are no less ample And the gain is immediate, not in the future—the unfathomable mystery. The obstructionists in the education of the people have accomplished nothing, nor can they do more. Year by year the public is becoming better and better informed. Diseases which once ravaged communities, leaving traces in almost every house, are now seldom encountered, and will eventually be only a matter of history. The inevitable result of continual enlightenment will be far greater happiness for all, and many years will be added to the average length of life.

There is no subject pertaining to health which deserves greater study from the people at large than that of infectious and contagious diseases. To many of these children are peculiarly susceptible, and some, when occurring in early years, and even in a mild form, are always dangerous to life. Stamp out these diseases, and the mortality in childhood, which is now, in every community, far greater than it ought to be, will be nearer that, as it should be, at other periods of life. We have already described in these columns some of the many ways in which infection takes place; there are others, and almost equally as direct, which we must not fail to recognize.

It is possible that it has never occurred to many that the average washerwoman is a frequent medium for the transmission of infectious diseases, and that we run many dangers from the modern laundering system. Nearly all, if not all, women who live by "taking in washing" are poor, and very poor at that. Surely it cannot be from choice that they engage in the laborious employment; only stern necessity could force the majority of them to it.

Occasionally we find one among them who has a class of patrons willing to pay sufficiently well for the work to enable her to live in what we should call a decent neighborhood. But one so situated is a rare exception, for her competitor who lives in the slums, whose rent is the lowest, can work for a few cents a dozen less—and it is bargains we are after in this age. The consequence is that the most of our washerwomen are at home in the cheapest of tenements, their families are crowded into the smallest possible space, mere pens, in old ramshackle rookeries, filled from cellar to roof with others, and, as a rule, far less reputable than themselves.

It is in just such places as these women are forced to live that infectious and contagious diseases run riot, for there abound the filth, the poisoned air, and other conditions so favorable to their propagation. It is there, also, that the simpler ailments take on a virulence which give them almost a malignant character. Our washerwomen, without doubt, are as cleanly in their homes and in their habits as it is possible for them to be, situated as they are, but with such surroundings they must share in the evil consequences. All know with what ease such most dreaded diseases as small-pox, diphtheria, and scarlet fever are conveyed in clothing. Why, then, is it impossible, and is it not more than probable, that these poor women are often the unconscious carriers of contagion into the homes of their patrons?

Proof is not wanting that many, many times such misfortune has followed their footsteps. One case we will give, which was reported in a distant city some time ago. A washerwoman, living as a majority of her class live, did the laundry work for two families, one of them wealthy and the other well to do.

Diphtheria of a malignant type broke out in the dirty tenement where she lived. Two days after its appearance, and before its terrible character became known to the official inspectors, she carried home her week's wash to the two customers mentioned. Within forty-seven hours the disease in its worst form broke out in both households. In one it killed two children, and left one child and the mother invalids for more than six months; in the other, it carried away the only child of the family, and both parents nearly died from it. In the house of the washerwoman—the carrier of the contagion—the disease continued for some time, and fifteen lives were lost. Cases so disastrous as this may not be common, and yet there appears no reason to doubt but more than one has occurred, and certainly cases less serious in their consequences cannot be infrequent.

It is hard on these poor, industrious, and almost invariably deserving, women that we say aught which may lessen the mere pittance which they receive for hours of exhaustive labor, and yet the duty is plain. Those who are exposed to the evils and dangers of which we write must, for their own safety and the safety of others in their charge, fully realize their weight. All, by no means, are brought within their influence, and yet not a few are.

In cities, especially, the number is large who patronize the washerwoman. We find them in boarding houses, in apartment buildings, and some among those of quite extensive establishments. These same patrons are largely responsible for the evils to which they are, very likely, unconsciously exposing themselves. They jew their washerwomen down to the lowest possible rates, and actually compel them to live in the meanest quarters, where misery and disease are no strangers.

Not only may the washerwoman involuntarily be the bearer of disease into the homes which she enters, but in her methods of doing her work there is often danger. She has several customers, and at stated periods she calls for their laundry. Passing from one house to another, she collects the pieces, and for convenience puts them all together and makes one bundle of them. The soiled clothing of all is packed in indiscriminately, and remains so until she "goes to wash." If her customers were, without exception, models of health, there would be but little danger from contact, although many would object to it if they knew it. But the trouble is, all of a washerwoman's customers are not certain to be in perfect health. Some one may have a contagious disease which is easily transmissible.

In this instance we do not refer to the acute affections of that character which render patients sufficiently ill to confine them to their room or bed. We mean, rather, diseases of the skin and blood, and others which one can have and yet remain at his accustomed duties.

Washing day comes. The cotton and linen clothing are boiled together. If they are boiled long enough, all germs of disease are destroyed, and there is doubtless really little danger to be apprehended from clothing of that sort after it comes from the boiler of the average washerwoman. Yet, were it infected with small-pox, or some of the other rather uncommon diseases, it would need to be boiled two or three hours before it could be rendered unquestionably harmless. With the woolen clothes it is different. These, we believe, are not boiled—at least, few would care to have their underflannels so treated. As a consequence, if germs of disease become lodged in them, there they are likely to remain indefinitely, a persistent evil.

Thus it appears that not only may our poor washerwomen, without knowing it, be the bearer of disease from those sick in her own unhealthy home and neighborhood, but she may, by her imperfect methods in washing, cause the transmission of disease from one of her patrons to all the others.

Surely we are grievously at fault in this, one of our common customs, and in the interest of all some change is demanded. Steam appears to be the most efficient disinfectant which is serviceable in the laundry. In our modern steam laundries the process is one by which all clothing is thoroughly disinfected, yet there are objections to many of them. But very few do their work as they ought. The linen from them is often badly streaked, and the "wear" is something discouraging to one of moderate means.

Were they to be honest and do as they should do, there could be no objection to them, and safety from disease would certainly be secured If we adhere to our old system, at least we ought to be willing to pay fair rates, that our washerwomen may be able to live in decency, and so be free from the first danger to which we called attention. And yet, after all, unless she makes some radical change in her methods, there is still the danger which we have described from the woolens.

We are informed that the Chinese laundryman always uses a form of chloride of lime, or some similar preparation in the form of bleaching powder, in washing, to "whiten his clothes." If that is true, his method is to be commended, for the agent employed has a disinfectant, as well as bleaching, property, and infected clothing passing through this process is more than likely to be made perfectly harmless by it. We assume, however, that the bleaching powder is only used by them in washing white fabrics; colored clothing would, of course, be likely to be injured by it. As much of the underclothing worn is colored, then, even in the method of these laundrymen, there exists the same evil as with our washerwomen.

In one at least of his methods, Chinese laundrymen cannot be considered an improvement. Instead of the old-fashioned way of sprinkling the clothes with the hand, we have watched some fill their mouths with water, and squirt it out on them from between their teeth. It has been said that in that way germs might be communicated, if the laundryman was suffering from disease; but such a thing is hardly likely to occur, for the heat from the iron subsequently used would generally destroy them. Nevertheless, the habit is barbarous and filthy, and cannot be too strongly condemned.—*Boston Journal of Health.*

THE BEST FOODS.

With what alimentation shall man best maintain his organic heat, increase his muscular forces, and keep his body in the highest possible condition, moral, physical and intellectual? This is the question that M. Gallavardin has attacked in a study recently published at Lyons, and the conclusions arrived at by him may be summed up as follows :

From childhood up, the human being should be accustomed to the use of

1. Fat-containing matters; such as milk, cream, butter, chocolate, cacoa, fat of meat, marrow, vegetable oils, etc.;

2. The feculents, particularly those containing fat or sugar;

3. Saccharine matters, such as sugar, honey, sweet fruits, fresh and preserved ;

4. To eat as little lean meat as possible, the inferiority of which as a heat and strength-producer has been demonstrated. [Under this caption the author cites, with approval, the alimentation of the better classes of English children, whose food consists of tea, milk, butter, fatty matters, rice, potatoes, fruit, etc. Meat is given but once a day, and never after 2 o'clock p. m.]

5. Vegetarians demonstrate their ignorance in their total rejection of flesh meat, which consists of two totally different, and even opposing, elements, *i. e.*, fat and lean. The fat, like butter, contains 83 per cent of absolute nutriment, and marrow, like olive oil, contains 96 per cent, and were the vegetarians wise they would make use of these substances (fat and marrow) just as they use olive oil and butter.

Fatty, feculent and saccharine matters are true economical aliments, since all of them augment animal heat and force and diminish the waste of the animal economy, liquid and solid. Even in the tropics, where animal heat is in excess, it is not necessary to exclude fatty matters from the dietary. They should be used even in these hot countries, but in diminished quantity, since they possess the advantage of producing a continuous force, and experience has proven that they more easily allay hunger and thirst, and thus by their smaller volume place less work upon the digestive organs. The autochthones, the indigenous races of the hot countries, seem to have learned this fact, and when they cannot obtain fatty animal food use those vegetables and fruits which contain most fat. Thus, the Egyptian fellah of the poorest classes, having neither butter nor oil at his command, lives upon maize, which contains four times as much fatty matter as cheese. The negroes of equatorial Africa, the Dahomians, for instance, revel in *caloulou*, the national dish, which consists of no less than ten vegetables, swimming in palm oil. The Africans, Arabs, Hindoos, all use great quantities of *ghee* which is butter, melted for preservation.

On the authority of M. Grandeau, of Nancy, the author states that the world uses 776,440,000 hectoliters (a hectoliter is about 25 bushels, hence about 19,500,000,000 bushels) of wheat, and 1,000,000,000 hectoliters (25,000,000,000 bushels,) of maize annually. Of the latter about 7,500,000,000 bushels are used by man, the balance being fed to animals.

We may remark, in addition to the foregoing, that Humbolt remarks that maize is the food of all man in hot countries, Egypt, Italy, the southern United States, Central and South America, etc., the reason being, probably, because in less volume it contains more fatty nutriment than any other grain, and hence it requires a smaller volume of it to appease hunger.

It is a significant fact that rachitism is almost unknown in those countries where there is a plentiful supply of maize, and where man uses it as a staple food.—*National Druggist.*

MILK AND CONDENSED MILK.

Normal cow's milk should contain about three and one-half per cent of butter fat, and should yield, on standing in a cool place for twenty-four hours, from ten to twenty per cent by volume of cream. Until the establishment of milk inspection in cities, whole milk was something of a rarity. With careful inspection, such as obtains in Boston, the percentage of adulteration has been largely reduced.

An ingenious method of milk adulteration is sometimes practiced by the shrewd husbandman in such a way as to preserve his tender conscience from being seared. The cream in the cow's udder is naturally separated in part from the milk, unless the cow, just previous to milking, be subjected to violent exercise. The first milking, therefore, is less rich in butter fat, and it can be sent directly to the consumer. The last of the milking, called strippings, on the other hand, is nearly pure cream, and can be preserved for butter making. Butter fat being lighter than whole milk cannot be removed without increasing the density of the remainder above the normal. This density, however, can be reduced to the proper limit by the judicious addition of water. The testing of milk by the lactometer alone is, therefore, not a certain method of discriminating between a pure and an adulterated article.

Condensed milk is made by evaporating whole milk at a low temperature and in a high vacuum, in copper vessels, yet even at this low temperature some of the distinctive aroma of the milk is carried off by the escaping vapors. It therefore, happens that even when evaporated milk is diluted to its original volume with water, it is never exactly itself again. Yet a pure condensed milk is not an adulterated article, for it is sold as condensed milk, and hence no fraud is practiced. When on the contrary, as is often the case, sugar or salicylic acid is added, in order more securely to preserve the condensed product, then a perfect case of adulteration is established. The manufacturer, however, may relieve himself of all responsibility, in so far as the addition of sugar is concerned, by stating on the label the amount added. In cases of deleterious preservatives, however, there would be no excuse. Their use in all cases should be prohibited.

HELPFUL HINTS.

Nothing will give such a polish to glass, even the finest, as slightly moist newspaper to wash it and dry newspaper to give the finishing touches.

Never put tea leaves on a light-colored carpet; they will surely leave a stain.

All flannel can be kept from further shrinking if it is first soaked in cold and then in hot water before it is made up.

A beefsteak cut an inch thick will be cooked rare in ten minutes. A mutton chop cut three-fourths of an inch thick will cook in eight minutes.

In packing bottles of canned fruit for moving, slip a rubber band over the body of them.

To cleanse glass bottles that have held oil, place ashes in each bottle and immerse in cold water; then heat the water gradually until it boils. After boiling an hour let them remain till cold. Then wash the bottles in soapsuds and rinse in clear water.

Sift a tablespoonful of pulverized sugar over the top of two-crust pies before baking, and see how delicious it makes them.

Piano keys, yellow with age, can be cleaned by a dilution of one ounce of nitric acid in ten ounces of soft water. Apply with a brush and wash off with flannel.

The odor of onions left on the hands after peeling them can be removed by rubbing the hands with celery or mustard.

Ripe tomatoes will remove ink and other stains from white cloth, and also from the hands.

To prevent buffalo moths, wash the floor with turpentine before laying a carpet.

To keep cheese from moulding or from drying, wrap it in a cloth dampened with vinegar and keep it in a covered dish.

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Tea in Russia.—The Czar has approved of the suggestion, recently submitted to him, of trying the culture of tea in East Russia, the climate and soil of which resemble those of China. The conditions of labor, the main obstacle to the successful cultivation of tea in the United States, are also favorable to the introduction of the plant in Russia.

HYGIENIC.

READY METHOD OF DETERMINING THE PURITY OF POTABLE WATERS.

In these days of newspaper science and crude and ill digested bacteriological superstitions among the multitude of the readers of current literature, there has sprung up a general superstition of our drinking waters, and a tendency to refer to them all of the ills, real and imaginary, that the digestive tract is heir to. The consequence is frequent applications to chemists, pharmacists, and experts generally, for analyses of drinking water. Of course, if these people had even a remote idea of the value in money of the labor necessary to make trustworthy wrter analyses, and were ready to pay such sums, we would be the last to deprive them of so innocent and (to us) profitable a hobby. But such, unfortunately, is not the case. A dollar or two, and frequently less sums than that, are all they are willing to pay, though occasionally a person is found who will give up more.

In reading, recently, a report of Dr. Kubel, a pharmacist of the town of Holymunder, on the water of the wells and fountains of that city, we were struck with the idea that his method afforded a means by which pharmacists might turn this desire of the public for cheap analyses to profit to himself. Dr. Kubler separated the samples of water, of which therewere a large number, into classes, according to their degree of limpidity, color, and their contents in ammoniacal salts.

He says that troubled or turbid water is exactly comparable to a dusty atmosphere, and when the former does not become limpid on repose, the phenomenon is due to the presence of a large proportion of organic matter. Further, he states that a pronounced color is always evidence of the propinquity to the sources of the same, of stables, manure heaps, privies, etc., and hence of ammoniacal salts and nitrites.

Dr. Kubler used in his researches two clear white glass tubes, closed at one end, each of 2 cm. (0.8 inch), in diameter, and 35 cm. (14 inches) in length, placed side by side. One of these is filled to the height of 12 inches with distilled water, and the other to the same height of the water to be examined. A piece of white paper is placed below the tubes, and then the observer looks through them from top to bottom (perpendicularly). Thus examined, the slightest turbidity or color becomes visible. Two similar tubes are then filled with the suspected water, and to one the observer adds a few drops of Nessler's reagent (potassium iodide, 50 gms.; distilled water, 50 ccms.; dissolve. Mercury bichloride, 25 gms; hot distilled water, 100 ccms., dissolve. Mix the solutions and add potassium hydroxide, 160 gms., dissolved in 400 ccms. of distilled water. Fill, after cooling, with distilled water to make 1 liter.) To the other add a small amount of potassium iodide, starch, and dilute sulphuric acid. Agitate both tubes. If ammonia be present it will be shown, in the first tube, by a yellow coloration. A blue color in the second denotes nitrites.

These simple operations, with the apparatus in readiness and the reagents prepared, should take but a few moments, and would be well paid for, if a man could get enough of it to do. with a $5 bill or even less.—*Nat'l Druggist.*

MEDICAL.

MEDICAMENTS DERIVED FROM COAL TAR.

As a consequence of the progress made in the manufacture of coloring materials from coal tar, physiologists and physicians have been able to experiment with a host of new products, some of which have found a place as therapeutic or antiseptic agents. The substances submitted to such experiments are of very diverse nature, but there is observed in them, nevertheless, a limited number of characteristic groupings. They are phenols, acetylated amines, and sulphonated, sulphureted, iodated, and chlorated derivatives of the aldehydes. Methodical experiments have not been numerous enough, and the data furnished by biological chemistry are not precise enough, to allow us to establish any relation between the constitution of these bodies and their physiological properties, provided any exists. Their applications, in fact, exhibit many anomalies. We see products that are very different as to constitution act upon the organism in a similar manner, and substances that are analogous, from a chemical point of view, produce very different therapeutical effects. With the information that we possess upon this subject it is hazardous to draw absolute conclusions.

The number of organic bodies proposed as antiseptics or as medicinal products is very large, and one or more new medicaments are observed to make their appearance every day. We can mention but a limited number here, in selecting the most important of them.

We have arranged these substances as antithermics and analgesics, and hypnotics and antiseptics. There is nothing absolute about this classification. A large number of these products has at the same time several of these properties. For example, chloral, which we place among the hypnotics, is an analgesic, and is even employed as an antiseptic, and asaprol is at the same time an antiseptic and an analgesic.

1. Antithermics and Analgesics.—Of all the artificial antithermics, antipyrine or analgesine is the most widely used up to the present. It is derived from phenyl-hydrazine, which is itself obtained by dinitrating aniline and in reducing the dinitro-benzol thus obtained. This phenylhydrazine is afterward condensed with acetoacetic acid, and then, finally, the product is submitted to a methylation. We have at last the dimethyl-phenyl-pyrazolon that constitutes antipyrine. It is very soluble in water, and this property permits of administering it under the most varied forms—a quality that is highly appreciated in pharmacy. It must be observed, however, that, as a general thing, solubility has no relation whatever with the quickness of action and assimilation of a medicament. Phenacetine, while being but slightly soluble in water, acts nevertheless as quickly as antipyrine.

The success of antipyrine has evoked a series of experiments with the object either of preparing substitute antipyrines and of analogous pyrazolons, or of associating it chemically with other substances. In the first order of ideas has been produced tolypyrine, which is a paramethylated antipyrine in the phenylic nucleus, and then chlorated, bromated, etc., antipyrines. In the second series antipyrine has been associated with salicylic acid, and this has given salipyrine. Tolysal is the salicylic combination corresponding to polypyrine. Apropos of hypnotics, we may mention hypnal, which is a derivative of antipyrine and chloral.

Thalline and kairine are quinoleic products that have been proposed likewise as antiseptics.

Among the oldest analgesics and antithermics, we find acetanilide and antifebrine, which are prepared by treating aniline with anhydrous acetic acid. If, instead of operating with aniline, we start from hydroxylated aniline, that is to say, from a product which is both phenol and amine, and etherify it before acetylation, we shall have phenacetine or phenedine.

Thymatecine is the phenedine of thymol, and exalgine is derived from the acetylation of methyl-aniline.

Salicylate of soda has been for some time employed as an antirheumatic. Salicylic acid is a carboxylated phenol, that is to say, a body that is at once phenol and benzolic acid. It is prepared by passing a current of carbolic over phenate of soda at a high temperature. Several applications have been found for its derivatives, among which may be metioned salipyrine, that we have spoken of above, and salol, which we shall find among the antiseptics.

Asaprol has the same action as salicylate of soda. It is obtained by treating beta-naphthol with sulphuric acid at a low temperature. It is the sulphuric ether of beta-nahthol. It is offered in the state of colcium salt very soluble in water. Under the name of abrastol it has been used as a microbicide.

2. Hypnotics and Various Medicaments.—One of the most frequently employed hypnotics is chloral, which is the hydrate of trichlorated acetaldehyde.

An endeavor has been made to associate it with various organic substances. In this way have been prepared: Chloralose, which is a combination of chloral and glucose; hypnal, which is due to the union of one molecule of antipyrine and one of chloral: and somnal, which is obtained from chloral and urethane.

Sulphonal is likewise a very efficacious hypnotic, but its constitution has no relation with taht of chloral. Chemically, it is called the diethylsulphone of dimethyl-methane. It is formed by the combination of acetone with ethyl-mercaptan. Trional and tetronal form part of the same series.

For skin diseases there have been proposed dermatol, which is the subgallate of bismuth; sulphaminol, obtained by the action of sulphur upon meta-oxidi phenyl-amine; resorcinol, which is a combination of iodoform and resorcine; and lysophane, which is chemically called triiodo-meta-cresol.

Tumenol, thioline and sulphonated thiophene are designed for the same use.

Piperazine, a nitrated product of the closed chain series, is diethylene diamine. One of the processes of preparing it consists in causing ammonia to act upon bromide of ethylene.

Orexine serves to stimulate the appetite. It is a hydrochlorate of phenyl-dihydro-quinazoline.

3. Antiseptics.—Among the organic antiseptics, we find, especially, bodies with phenolic and aldehydic functions, and halogenated derivates.

Phenol, beta-naphthol and gaiacol are characterized by the phenolic grouping OH directly connected with the benzolic or naphthalic nucleus.

The use of a large number of phenolic derivates has been recommended. Thus, salol is salicylate of phenol, and betol is the salicylate of beta-naphthol. The union of benzoic acid with naphthol gives benzo-naphthol.

Abrastol, of which we have above spoken under the name of asaprol, is the salt of calcium of the sulphuric ether of beta-naphthol. It is a microbicide at present proposed for the, preservation of wine.

Among the phenolic products of less importance, we may mention alumnol, sozal, daphtherine, phenoline, cresine and microcidine. Iodoform is triiodated methane, analogous to chloroform as regards constitution. This antiseptic has, as well known, an insupportable odor. An endeavor has, therefore, been made to substitute odorless and likewise iodated substances for it. Among the bodies proposed to this effect we may mention diiodoacetylene or diiodoform. In order to prepare this alkaline hypoiodites are made to act upon an aqueous solution of acetylene, or water upon a mixture of iodine and carbide of barium, or else by treating acetylene with iodine in the presence of an excess of potassa at a low temparature.

There likewise exsists a tetraiodo-acetylene. The other iodated derivatives are: Traumatol (iodo-cresylol), aristol (iodo-thymal) iodol (tetraiodo-pyrol) and sozoiodol (diiodo-paraphenate of sodium).

Formol, which has recently been proposed as an antiseptic, is form-aldehyde. It has the great advantage of being volatile, and, consequently, of penetrating to the very interior of the objects to be disinfected.

Ichthyol, anytine, thial and thiolinic acid are sulphonated and sulphureted derivates of organic and mineral oils employed in this state, and that serve as solvents for products insoluble or but slightly soluble.

Among the substances mentioned, a small number only will doubtless receive the sanction of practice, but the road is laid out. On the one hand, syntheses are multiplying with the object of finding new series, and, on the other, the natural alkaloids are the object of numerous studies. With the means now at the disposal of chemistry, it is impossible to study the active principles of digitalis, belladonna and a host of other natural products. We shall certainly succeed in giving such alkaloids a greater energy, perhaps new properties, and even replace them by substances of which the syntheses will be only the results of a study of the products, of their reduction and of their decomposition.—*Le Genie Civil.*

LITTLE HELPS AND LITTLE HINTS CONCERNING THE PROPER FEEDING OF INFANTS.

JAMES ALLEN PATTERSON, M. D , SALEM, N. J.

No doubt every practitioner has been frequently impressed with the increasing inability of mothers to suckle their offspring, and the difficulty of obtaining a proper substitute for nature's provision. It therefore behooves us to study deeply and observe minutely, that we may meet the various demands made upon us, and surmount obstacles as they arise.

I have ofttimes noticed the inability of the laity to appreciate the fact that infants require feeding in proportion to their digestive ability and constitutional requirements. Many mothers labor under the erroneous impression that because an acquaintance feeds her babe in a particular manner, her own child, which may be of the same age but of entirely different diathesis and digestive capacity, can subsist or thrive upon a like regimen. There are more infants starved in cell-growth than many are aware of. While some may manage to make out a fretful and diseased existence in babyhood and suffer through life from the ills due to a depraved constitution, many perish by the wayside an easy prey to some epidemic which may attack them.

I am firmly of the belief that a child, particularly if fed upon an artificial food, should be constantly watched, and when it is found that sufficient gain in body weight is not being made monthly, that its flesh is pale, flabby or in any wise of unhealthy appearance, that it is not sleeping well or is fretful, its diet should be varied or radically changed and any constitutional dyscrasia prescribed for. It is my experience that a child who digests well and is properly nourished, sleeps well and is happy and good humored, at the same time making continuous gains in size and weight while maintaining a healthy complexion and elastic flesh. Children that are fretful and sleepless are as a rule fed in a faulty manner or upon food which they cannot fully digest.

As a substitute for breast milk, we naturally turn to cow's milk, from the comparative ease with which it can be obtained and the experience which every one knows of its ordinary adaptability. But cow's milk has disadvantages, which have been frequently pointed out, namely: its excess of curd and its acid reaction.

The excess of curd is somewhat counterbalanced by dilution, and its acid reaction by alkalies, but in subtracting the excess of curd by dilution we lower the amount of fats and albuminoids, thereby losing elements of food value.

The dried preparations of milk and starchy ingredients, sold as various infants' food have rightly been tabooed by eminent and experienced clinicians.

Years ago Charles D. Meigs saw the advantages derived from cream and milk, to which was added a starchy ingredient. The food compound bearing his name consists of cream, milk, arrow root, gelatine and sugar. While not an ideal compound, having the disadvantage of containing starchy ingredients in a form not easy of assimilation, the gelatine being of questionable food value and the cane sugar too prone to ferment, it did a good work in its day.

Various cream mixtures have been proposed and used since the time of the elder Meigs, the leading ones being those of his son, A. V. Meigs, of Biedert, and of Rotch.

The above three compounds, while being very similar in composition, are almost identical in analysis to that of breast milk, and agree with some infants. They have the disadvantage of being troublesome to prepare and keep, in addition to containing sugar of milk, an article which is liable to contain gritty particles, which do not always dissolve promptly; an article which is quickly "converted into lactic acid, so that the excess of acid accumulates in the stomach and causes the protein substances to coagulate and become indigestible; it dissolves the alkalies and calcium out of the phosphatic combinations to no purpose except to produce dyspepsia and diarrhœa and, according to Heitzmann, rhachitis," (p 49. Jacoby Intestinal. Diseases of Children). In addition "many specimens of milk sugar have been found to contain bacteria derived from the milk from which it is made." (Neuman *Berl. Klin. Woch.*, 1893, No. 22, quoted in *Am. Med. Surg. Bull.*, December, 1893) the low temperature habitually used to separate it from the milk not being sufficient to kill them.

Rotch, whose formulæ is—

Cream (twenty per cent)	1½ ounces.
Milk	1 ounce.
Water	5 ounces.
Milk Sugar	½ ounce.
Lime Water	½ ounce.

makes a very strong point in the mixture by advising the use of centrifugal cream, the ordinary strength of which is twenty per cent. This manner of separating the cream from the milk by machines making 7,000 to 9,000 revolutions per minute, cannot fail to produce a more minute subdivision of the globules than is obtainable in the old manner of skimming, or the somewhat similiar plan of drawing the milk from the cream by gravity. Centrifugal motion has in addition a cleansing action upon the product, as after the machines have been in use, their sides are found filled with a filthy ingredient, resembling a tough curd containing pus, blood and filth from various sources. I speak from ocular inspection, having made no microscopical examination of it.

The requirements for an ideal food for infants appear to be dilution to lessen the proportion of curd, the addition of cream to supply the requisite amount of fat and of an assimilable form of starchy ingredient to maintain the separation of the curd in finely divided masses, whilst supplying certain deficient and valuable food values, and an alkali to counteract the acidity of the cow's milk.

The amylaceous ingredient can only be obtained in assimilable form by converting the starchy grains used into the diastasic products, dextrin and maltose, while maintaining much of its mechanical effect upon the minute subdivision of the curd.

My plan has been to use cream, or cream and milk with Mellin's Food, a food which consists of the dextrin and maltrose products of wheat and barley alkalanized. It supplies the sweetening power and albuminoids in a much more palatable and digestible form than the cream mixtures above spoken of. I have used both and believe the compound is more easily digested and has given me better results. And is it to be wondered at when we recall the researches of Musculus and O'Sullivan, who confirm the physiologically important question *that* the action of malt diastase is identical with the action of the salivary and pancreatic secretions, ptyalin and amylopsin. (Digestion and Diet by Sir Wm. Roberts, p. 26). Again the experiments of Schiff have proven that "in many cases of vomiting" dependent upon the insufficient formation of pepsin, injections of solution of dextrine will enable the stomach to resume its function, or being injected into the rectum, will furnish an absorption material for the secretion of pepsin." (Infant Diet by Jacobi, p. 96 and 105).

The following formula has given me excellent results:

For a child aged from three to six months, six to seven tablespoons of cream, with or without three of milk, three of Mellin's Food and water one quart, gradually increased to ten of cream, and five each of milk and of Mellin's Food to the quart. I direct that the cream and milk be first scalded with the desired quantity of boiling water, when sufficiently cold the Mellin's Food is to be dissolved in it and the mixture placed in a refrigerator. When the child is to be fed, the mixture is stirred and sufficient quantity warmed, in this respect merely following the directions supplied with each bottle of the food.

When the patient's stomach is in a demoralized condition, I begin with the cream and Mellin's Food combination only. When that agrees I gradually add the milk.

A child of two months, suffering from marasmus is doing well upon a formula consisting of five parts of cream, one of Mellin's Food, and five of water. At first it required to be fed by the spoon, being too weak to draw from a nipple and was only able to take four to six ounces in twenty-four hours. In a week, subsequently, it took a quart to twenty-four hours, while its digestion as shown by the cessation of diarrhœa and absence of colic, heretofore troublesome symptoms, has become normal. Its increase in body weight and growth is surprising.

DOES VACCINATION PROTECT.

By C. A. Lindsay, M.D., Secretary, Couut St. Board of Health.

After almost one hundred years of the severest testing of its efficacy and the most convincing proof of its power, the question is still agitated, Does Vaccination protect?

It may be almost assumed as an unvarying fact that there is no scientific truth however fully demonstrated, that there will not be also some oblique minded men, who will dispute it with the persistence of congenital obstinacy and the blindness of wilful ignorance, and like the Rev. Bro'er Jasper insist that "the sun do move round de urth."

The misrepresentations, misquotations, perversions of facts, and false assertions of the anti-vaccinationists would be only amusing to well informed people and deserve no other notice, were it not that their erroneous statements are so industriously circulated that ill-informed people are in danger of being misled by them and becoming imbued with dangerous prejudices.

The objections urged are chiefly two. 1st. That it is not protective. 2nd. That it is dangerous in itself and also by introducing other diseases into the subject.

The strength of the first proposition lies in ignoring the accumulated proofs of its protective power, and in exaggerations and misrepresentations of cases of post-vaccinal small-pox.

The advocates of vaccination do not claim that one vaccination is a perfect or permanent protection; but only that if recent it is almost absolutely protective, and if not recent, it will mitigate the disease, almost invariably, and convert it into the milder and safer form of "Varioloid." The logic of the following facts seems invincible. In Brussels, out of more than 10,000 children vaccinated in 1869–70, not one case was reported as having been attacked by the terrible epidemic of small-pox which swept over Europe soon after. Large rewards were offered for information of cases but without avail.

In the severe epidemic of small-pox which swept over the Island Hayti in 1881–2, Dr. Terres says that, although attending 200 or 300 severe cases every day, neither he or any of his family or servants took the disease (13 persons in all), their only protection being successful vaccination. The scholars and teachers of three schools (500 in all) were successfully vaccinated, and only one case occurred. That was not fatal.

Dr. O. W. Wight, late Health Officer of Detroit, said: "During the winter of 1881–2, when small-pox was epidemic, I allowed 14 well persons to go to the pest-houses of Detroit, who wished to take charge of other members of their families, removed there on account of the disease. All of them were vaccinated at the time of going. Not one of them had even a light attack of varioloid. When the anti-vaccinationists will show half or even quarter the number of unvaccinated persons exposed in the midst of the sick and the dying to concentrated contagion without the least injury, I will then listen patiently to their arguments."

Facts like the above are innumerable, and could fill volumes.

The other objection is entitled to consideration. The vaccination of a person already the subject of some latent disorder, even if with pure vaccine virus, might produce ill-effects. Vaccination would hasten the development of disease in cachectic constitutions. Hence, it is an operation not to be heedlessly performed upon unhealthy subjects by unskilled persons.

Impure virus, that is, vaccine containing the germs of other disease than cowpox, has rarely if ever, occurred from bovine virus, and must be the result of inexcusable carelessness when it follows the use of humanized virus. These risks, however, while they are not denied, are most remarkably infrequent in view of the practice of vaccination as too commonly performed. The fact that such dangers exist emphasizes the importance of the utmost care in performing the operation. The custom of Boards of Selectmen to contract with the lowest bidder for the vaccination of the poor, and the purchase of the cheapest vaccine for their use, cannot be too strongly condemned.

The writer has often heard the town-hired doctors boast that they could vaccinate 20–30 and even 50 in an hour; they received 10 cents apiece. Such reckless carelessness and indifference to the rights of pauper children is criminal. The chief wonder is that the anti-vaccinationists do not find more abundant illustrations of bad results than they do.

President Hibberd says very truly: "That when pure vaccine virus is inserted under proper conditions into the tissues of a person fit to receive it, there is positively no shadow of evil, but a promise of good not surpassed by any single measure of preventive medicine."

ADULTERATION.

FOOD INSPECTION IN PARIS.

The municipal laboratory of Paris is a chemical police service. Instead of a surveillance over men, it exercises one over compositions. It searches for poisons, microbes, and adulterations just as the ordinary police searches for assassins, thieves, and embezzlers. It surveys suspected milk cans as the other does suspected houses. It gives the Parisian public full information on the composition of the food it consumes and the liquid it drinks, to warn it against any manufactured article which may be dangerous to health; to inspect regularly the markets and food-selling shops of the city for fraudulent and tainted goods, and if any are found to give the court the information necessary to punish the dealer; to make the analysis necessary to the police in pursuing its investigations, as in the case of the bomb in a front hall; to aid in the same way any institutions of the city, the hospitals, the prisons, the schools. Is the coffee muddy, the milk blue, the wine sour, the meat tough? Madame or monsieur appears forthwith at the desk in the office where samples are received to demand an explanation. The name of the article, the date of its receipt, the addresses of the depositor and that of the merchant said to have sold it are noted, and a receipt given the person, with directions when to return for the result. The kind of analysis desired is also entered; that is, if it is to be simply a judgment on the quality of the goods presented—the analysis usually asked for by the public, and for which there is no charge—or if a quantitative analysis is desired, that is, a report on the exact chemical constitution. The quantitative analysis is less frequent than the qualitative. Nevertheless, the former yielded a revenue not to be despised. In 1889 it amounted to 39.075 francs. As soon as the sample is properly numbered, registered, and ticketed, it is passed to the laboratory charged with the analysis of substance of that nature, where work is supposed to begin immediately upon it. None of the visited rooms was busier than that devoted to wine. In fact, in 1889, out of 18,117 analyses made, 6,450 were of wines. The proportions are only in keeping with the consumption of the city, which averages about 150,000,000 dollars a year. Expert tasters begin the work, and give their judgment on savor, color, bouquet and disease. The chemist then takes it, testing its color with colorimeter, searching the bacteria with the microscope, gauging the alcohol with alcoholmeter or ebullioscope, determining the plaster of Paris, the sugar, the acidity, the tartar, all its fixed and volatile qualities, by the sure and delicate processes of the chemist. In the survey of the butcher shops a leading duty is to make sure that horse, ass, and mule meat are not masquerading as beef. Not that their sale is forbidden. On the contrary, the municipal laboratory itself has declared this sort of nourishment "an excellent thing." It simply demands that the meat be sold as equine and not bovine, and that the animals which furnish it are not decrepit or diseased. The first point is regulated by establishing shops especially for the sale of horse meat, or, if sold from a cart or in a regularly licensed butcher shop, requiring that it be marked plainly. Regulated by the municipality and watched by the Inspectors, the sale of horse meat has grown to enormous proportions since the first shop was established in the city, in 1866. Unquestionably the exigencies of the siege did much to reconcile the French palate and prejudice to hippophagy. The reconciliation was genuine, for it is estimated that it is eaten now in a third of the Parisian households. In 1891, 21,231 horses, 61 mules, and 275 asses were sold in the Paris shops. The meat costs about half what beef does. According to the laboratory, the quantity of fat is about the same, but the azotic matter is greater in horse meat than in beef. The daily duty of the Inspector takes him into even the public kitchens. Every dish which is used in a public restaurant of Paris, either in the kitchen or for the table, every pot, pan and utensil in the bakeries and chluculeuls, every beer faucet in the wine cellars, in short, everything used in preparing or serving food is under the care of the inspector. The law forbids the use of lead, zinc, and galvanized iron in the manufacture of cooking vessels. It orders that all copper be tinned and kept in good condition. It directs that pottery which is covered with a glaze containing enough oxide of lead to yield to a feeble acid be seized. It orders that tin cans should never be soldered on the inside, and that the materials used in their manufacture be conformed to a certain standard. It is the Inspector's business to look after all these things. A woman was at the desk with a bit of cheap colored candy, which one of the service was examining. "It is no doubt this stuff," he was saying, "which has made your baby sick." "There," said the guide, "is one of the reassuring parts of our service. That woman will receive to-day a lesson she will never forget. All her neighbors will hear it from her. Very often, too, we give them simple methods for detecting frauds. Thus they become their own inspectors."

POISONED BY ANALINE COLORED CANDIES.

Mrs. E. Broestler, of No. 654 East One Hundred and Fifty-first street, New York city, gave to her two boys, George and Raymond, some pocket money on Wednesday last and told them they could go out and get some candy. The boys went to the nearest candy store and purchased a quantity of "jelly beans" and "strawberry balls." During the afternoon the boys ate some of the candy, and when supper time came they were still hungry, and their mother gave them some cold kidney stew that was left over from the dinner. A little later in the evening George, who is only seven years old, complained of a pain in his stomach. His mother, thinking that he had eaten too much, gave him a simple remedy and put him to bed. All night long the little fellow complained and began to grow worse. When the boy's father got up, Dr. Von Duering, of No. 552 East One Hundred and Fifty-fifth street, was summoned. The boy was then in convulsions, and the doctor, thinking it to be a case of ptomaine poisoning, treated it as such, but in spite of all his efforts the little fellow went into convulsion after convulsion, and in a few hours died. As the boy died so few hours after the doctor was called, the coroner was informed and a permit was issued without any autopsy.

On Friday afternoon, after George died, Raymond, who is four and a half years old, was taken sick in the same way as his brother, and Dr. Von Duering was summoned at once. So long a time had elapsed since he had eaten the kidney stew, Dr. Von Duering abandoned the idea of ptomaine poisoning. On inquiry he learned of the candy, a little of which remained in the house. He found that aniline was used in coloring the candy, and at once concluded that Raymond was suffering from aniline poisoning. He administered an antidote, which seemed to have some effect.

Early on Saturday morning Raymond became rapidly worse, and had convulsions. Every effort was made to relieve the little sufferer, but he died without regaining consciousness. The coroner was not summoned in this case, as the boy had been under treatment the required length of time, On last Sunday the two boys were buried side by side. Not satisfied with his diagnosis of the cases, Doctor Von Duering bought a quantity of candy similar to that eaten by the boys, and after a partial analysis, attributed their death to the aniline of the coloring. He informed the Board of Health of the case, and the candy was turned over to them for analysis.

ECONOMY OF PURE FOOD.

There are many persons who, from a misguided sense of economy, purchase food which they know to be inferior, so that they may thereby save, in order to meet other demands of the family. Handsome clothing and fine houses in aristocratic neighborhoods are desirable, we admit, but not at the expense of the most important factor of our existence; especially when we know that pure, nourishing food is the immediate cause of pure blood and, consequently, more perfect nerve and brain power. It is not only false economy but positive crime to obtain edibles below the standard for the purpose of sustaining both the mental and physical health of the human being.—*Baltimore Telegram.*

NEW PRESERVATIVE.

H. W. Potts, chemist, Furoa, in an article to the *Australian Farm and Home*, says: "As a consequence of the able researches of Koch and other distinguished savants, several valuable new antiseptics, or germicides, have been recently introduced, and to these I devoted much attention, and eventually selected 'Formalin' as likely to answer our requirements. This preparation contains 40 per cent of formic aldehyde, and is manufactured by Schering, of Berlin, under a patent process. Previous to the recent introduction of this germicide, Schnetzler announced that formic acid destroyed one of the most persistent living forms of microbe known (*hacterium subtile*). From his experiments it was found that this microbe survived the action of boiling water for an hour, but immediately succumbed on being immersed in a solution of formic acid (1-1,000). This chemical, however, could not be applied to milk, owing to its acid character; but formalin, which is closely allied to it, did not appear to possess this objectionable feature, and yet had been proved to be a most powerful microbicide. Numerous tests carried out by Drs. I. Stahl Berlioz, and Frillat demonstrated conclusively the fact that the most persistent micro-organisms were effectually destroyed by formalin, and its power in this direction was equal to, if not greater than, bichloride of mercury (corrosive sublimate). Moreover, the physiological investigations of Aronson, Berlioz, and Frillat proved it to be relatively non-poisonous. It also possesses the further advantages of being very easily handled and cheap. It is a bright clear liquid, with little odor, and is readily soluble in water or other fluids.

"In no instance, however, could I find from a perusal of the literature on the subject than any scientist had suggested its application to the preservation of milk, to which it seemed so eminently suited; so I determined to thoroughly investigate its usefulness in this direction. The result of a long series of exhaustive experiment carried out by Mr. Lance and myself, not only in our labratories, but also at the factory and creameries with a practical bearing upon its future use in this connection, proved formalin without doubt to be 'an ideal harmless germicide,' and in our hands revealed a power of preserving milk quite surprising, and altogether superior to anything, so far as we know, that had ever been used for this purpose."

INVENTIONS, SCIENCE, ETC.

THE USEFUL VARIETIES OF NUTMEGS.

BY DR. WARBURG.

Read at a meeting of the Berlin Pharmaceutical Society.

The oldest works making mention of the nutmeg speak of several kinds which have attracted the attention of the earliest Dutch travellers. In 1596, before the conquest of Banda, Linschoten mentioned two kinds of nutmeg—round and long—and in 1605 Clusius gave drawings of a fruit branch of *Nux myristicamus*, as well as the ordinary nutmeg.

In several of the older drawings of Piso and Valentini the leaves of the true nutmeg are incorrectly associated with the fruit of this second variety. The term *Pala metsiri*, often used by Piso, is probably also based upon a confusion of the true nutmeg with a variety. However, it is on the whole clear what is meant, and there is no doubt that all these remarks apply to the *Myristica fatua* Houtt.—a tree which certainly grows wild in Banda and Amboyna, perhaps also in other of the Molucca islands. Its fruit is scarcely at all aromatic when fresh, in the dry state not at all, while the mace smells disagreeable and not aromatic. The fruit is therefore only used medicinally in that island for dysentery, headache, or as an aphrodisiac, and they were brought from thence only as curiosities.

As the intercourse between the Moluccas and New Guinea increased, an entirely new kind of nutmeg came into the hands of Europeans—the *Myristica argentea* Warb. That was probably first noticed in 1666. Since the middle of the eighteenth century it became an article of commerce in Eastern Asia. Towards the end of that century it was brought to Europe, and at the present time it is the most important article of export from New Guinea. Nevertheless this nutmeg remained undescribed and unknown, as well as the plant by which it is produced.

Warburg succeeded in obtaining information on this point through the assistance of a native who was persuaded to show him some of the trees in Dutch New Guinea. They were characterized by large leaves having a silvery appearance at the under side, and hence the name.

Next to *Myristica fragrans* the *M. argentea* is certainly the most important variety, and that which has the greatest future. The odor is not so delicate as that of the true nutmeg, but that may be due to the circumstance that it is not prepared and packed with as much care as the true kind. The export from the province of Onin is estimated by Beccari to have amounted to about 125 pounds at the middle of the eighteenth century, and it exceeded in importance that of all other produce. Since then the regular service of steamers has led to a great increase in this trade. Formerly the nutmegs were sent in small parcels by ships to Banda, there treated in the same way as true nutmegs and sometimes mixed with them. Now they are all taken direct to Macassar, where they are shelled and dusted with lime. The price of them in Macassar is about one-third that of the best quality of true nutmegs.

While formerly these nutmegs were used only in the Malay Archipelago, in the Philippine Islands, etc., by the natives, probably on account of their cheapness, as *Para papua* in the Malay country, as *Anizmoscada* in the Philippines, and came only occasionally to Holland and England, they are now regularly imported by way of Amsterdam into England as long nutmegs, and they have been known in Germany since 1890 as horse nutmegs. Apart from the fact that the aroma is not so delicate, the nutmegs are also very friable, but the broken fragments can be used for the production of essential oil. They are also very liable to be attacked by maggots even when they have been limed. The aroma is very permanent even when the nutmegs have been kept for a number of years. Samples dating from the previous century have still a strong smell when crushed.

Hitherto the mace has not been brought into commerce. Samples of it brought to Europe have a dirty-gray to brown-red color, but this is probably due to defective drying, since some of the nutmegs brought over by the author have a fine dark-red arillus that is very oily and has a powerful odor. It is uncertain whether in drying the mace would acquire the yellow-red color of that from *M. fragrans*, but it is certainly capable of being made useful, provided it can be properly prepared.

These nutmegs would come into actual competition with true nutmegs only in the event of their being carefully cultivated and gathered, as the produce of *M. fragrans* is in Hainen, and it is not improbable that their lower price would be compensated by a larger yield.

The nutmegs of *M. argentea* differ from true nutmegs in their narrow, long shape and the relatively less marked arillus furrows. The arillus generally consists of four broad stripes, which are united above and below. The same, with the hard shell, is from 3¼ to 4½ Cm. long and from 2 to 2½ broad. It is broadest at the base and becoms gradually narrower towards the end, externally of a bright red-brown color when fresh, but as met with in commerce it is generally rubbed and of a yellow-brown color. The fruit is embedded in a very thick pericarp, and when fresh it is from 4½ to 6½ Cm. long and 4½ to 5½ Cm. broad. The testa is nearly 1 Mm. thick. The endosperm contains much starch, and the brown runcination streaks, which alone contain the aroma, are more scattered and coarser than in the true nutmegs. The cotyledons are joined in a disc swelled at its edges to 5 Mm. diameter.

Among the available kinds of nutmegs the author mentioned *M. succedanea* Reinw., discovered by Reinwardt in the island of Tidore, one of the Moluccas, in 1821. The nutmegs can scarcely be distinguished from those of *M. fragrans*, and they are very aromatic. The leaves and flowers of this variety are, however, quite different from those of *M. fragrans.*

In New Guinea there is a great number of varieties of nutmeg plants, the produce of which possess some aroma, but, though permanent, it is generally too feeble to admit of these kinds being used to any extent as substitutes for true nutmegs.

As an adulteration of true mace the arillus of *M. malabarica* Lam., known under the name of Bombay mace, has been used during the last two centuries. It is much larger and more cylindrical than the arillus of true nutmeg, and the several flaps are united at the apex, forming a conical structure. The anatomical structure is also different, as may be seen by the aid of a microscope. When moistened with hydrochloric acid, the Bombay mace presents the marked peculiarity of assuming a greenish color.

REFINING TALLOW.

To a reader who asks how to refine and whiten tallow without injuring it the *National Druggist* replies as follows:

Place 5 or 6 pounds of tallow in a suitable vessel and cover it with a gallon of lime water. Apply heat, but do not bring to an active boil. Continue the heat for two or three hours, stirring the mixture frequently. Let cool, remove the tallow from the lime water, put into a flannel bag, and hang up to drain. Leave it hanging for several days, and then melt it along with a gallon of rain-water to which has been added about an ounce of hydrochloric acid. After remaining in contact with the acidulated water for an hour the tallow may be removed and washed with cold water. Finally, melt at a gentle heat to drive off any watery residue, and cast into a mold of any convenient shape. The tallow as thus prepared is white, odorless, and neutral, and fit for toilet and other purposes.

NEUROSINE THE MOST POWERFUL NEUROTIC ATTAINABLE.

ANODYNE AND HYPNOTIC.

A reliable and trustworthy remedy for the relief of Hysteria, Epilepsy, Neurasthenia, Mania, Chorea, Uterine Congestion, Migraine, Neuralgia, All Convulsive and Reflex Neuroses. The remedy par excellence in Delirium and Restlessness of Fevers.

FORMULA: Each fluid-drachm represents 5 grains each, C. P. Bromides of Potassium, Sodium and Ammonium, 1-8 grain Bromide Zinc, 1-64 grain each of Extract Belladonna and Cannabis Indica, 4 grains Ext. Lupuli and 5 minims fluid Ext. Cascara Sagrada, with Aromatic Elixirs.

RICHMOND, VA., Sept. 29, 1891.

I prescribe NEUROSINE in the class of cases for which it is indicated, daily, and with satisfactory results. It completely relieves restlessness in Fevers.

Landon B. Edwards

Ed. Virginia Medical Monthly.

MEMHPHIS, TENN., Feb. 6, 1892.

I obtained happy results from the use of NEUROSINE. It is certainly the best neuralgic medicine I have used. I have tried it in some cases of Trifacial Neuralgia, after having tried some of our most powerful remedies. None acted as well as NEUROSINE.

Editor Memphis Medical Monthly.

MEMPHIS, TENN., Jan. 7, 1891.

I have obtained entire satisfaction from the use of NEUROSINE in cases of Neuralgia.

Dean Memphis Hospital Medical College.

CHATTANOOGA, TENN., Sept. 6, 1891.

Having used NEUROSINE in a number of cases I must say the preparation has given better results and more universal satisfaction than any other combination ever used by me. Have tried it in many nervous affections, in some it is a specific, in others a therapeutic agent of very great value.

W. L. Gahagan

Coroner of Hamilton County.

McKENZIE, TENN., Feb. 12, 1891.

NEUROSINE had such a happy effect in a case of Neuralgia or Congestive Headache, in which I tried it, often having failed on other things of similar nature. The case was one of long standing Sick Headache of peculiar character. The lady, three days after confinement, without any fever, took severe headache. NEUROSINE relieved her immediately.

FOURCHE ARCUAULT, MO., March 29, 1892.

I sent about two tablespoonfuls of NEUROSENE to an old lady, aged 84 years; she had been complaining for some weeks with Headache and Neuralgic pains all over her body more or less. She took that small amount and has been quite free from pain ever since, went to church in a farm wagon, 1½ miles, rough road, and is still free from pain and sleeps and eats better. I am well pleased with it.

U. H. JOHNSON, M. D.

DOSE: From one teaspoonful to a tablespoonful, in water, three or more times daily, as may be directed by the physician

Supplied in Eight-Ounce Bottles.

To any Physician, unacquainted with the medicinal effect of Dioviburnia and Neurosine, we will mail pamphlets containing full information, suggestions, commendations of some of the most prominent professors in medicine and various methods of treatment. Or to those desiring to try Dioviburnia and Neurosine, and will pay express charges, we will send on application a trial bottle of each.

DIOS CHEMICAL COMPANY, ST. LOUIS, MO.

CATARRH.

The word catarrh, as commonly used and understood, relates to the well known and very prevalent affections of the nasal passages characterized by inflammation of the mucous membrane of the nose, often accompanied by a persistent discharge of mucus, by thickening of the turbinated tissues and mucous membrane, or by ulcerative and putrefactive processes in the nose and neighboring cavities, giving rise to certain unmistakable symptoms.

"If the whole were hearing," says St. Paul, "where would the smelling be?" Everybody knows something about the use of the eyes and the ear, but there are few who recognize the importance of the human nose. The nose is useful as a sanitary inspector. Most animals place their chief trust in their power of smell to enable them to avoid injurious substances for foods, or unhealthy places for habitations.

A healthy nose should prevent one from many sanitary evils.

But the chief use of the nose lies in its power of filtering the air that passes into the lungs. The internal structure of the nose warms the air which passes in, and stops particles of dust or micro-organisms that may be floating in the atmosphere. Neither of these duties can the mouth do nearly so effectually as the nostrils. All the air passages of the nose are lined with ciliated cells, which have little hair-like processes standing out, and these processes are like a field of wheat when the wind is blowing over it, all constantly moving in the same direction, and this direction is towards the mouth of the nose, so that any matter which finds its way into the passages of the nose is gradually carried forward and ejected.

Milk Cans, pans, churns, bottles, every thing which is used for milk, even down to the baby's bottle—these are things for which you need **Pearline**. With **Pearline**, they're cleansed more easily, more quickly, more economically, and more thoroughly, than with anything else known. The people who know most about milk say just that. We can't afford to print all the testimonials we hold. They're free expressions of opinion—in conventions, in papers, everywhere where milk folks have a voice. Their enthusiasm about **Pearline** is genuine. And it's natural. For all kinds of washing and cleaning, nothing equals **Pearline**.

Beware Peddlers and some unscrupulous grocers will tell you "this is as good as" or "the same as Pearline." IT'S FALSE—Pearline is never peddled, if your grocer sends you an imitation, be honest—*send it back.* 381 JAMES PYLE, New York

Indigestion

Horsford's Acid Phosphate

Is the most effective and agreeable remedy in existence for preventing indigestion, and relieving those diseases arising from a disordered stomach.

Dr. W. W. Gardner, Springfield, Mass., says: "I value it as an excellent preventative of indigestion, and a pleasant ascidulated drink when properly diluted with water and sweetened."

Descriptive Pamphlet free.

Rumford Chemical Works, Providence, R. I.

Beware of Substitutes and Imitations.

For Sale by all Druggists.

Since catarrh seriously impairs or destroys the use of the nose we at once see the danger of such a condition of the nasal passages.

Among the prominent symptoms of catarrh may be mentioned discharge from nose, foul breath, husky voice, spitting up of slime, blowing out scabs, stopped up nose, nose bleeds, crusts forming in nose, soreness and tenderness, considerable sneezing, which may be worse towards night, nose may itch or burn, tickling in throat, dropping in the throat, dry throat in morning, hawking to clear throat, impaired sense of smell, pain across the eyes, in front of head, in back of head, and ache all over, low spirits, a sense of growing weaker, losing flesh, appetite variable, cough, taking cold easily, loss of energy, nervous and irritable.

From these latter symptoms it becomes at once evident, and it is very true, that catarrh is often associated with certain constitutional conditions.

One of the most distinguished and successful physicians of the present age says: "Experience has taught me the value of the recognition of constitutional conditions in the treatment of persisting local affections." Another physician and author, a professor in a leading medical college of New York city says, "that whenever it becomes manifest that such a general condition exists it behooves us to treat that general condition, and so to remedy the local affection." To cure catarrh, appearing as a local affection of the nose, but due to constitutional impairment, we must correct the general health by the use of tonics and alteratives. This appropriate and necessary treatment is best brought about by using that most valuable tonic and alterative preparation, Ayer's Sarsaparilla, a combination which is based upon our knowledge of the action of its ingredients upon the organs of excretione It furnishes to the system certain normal constituents which are defective in our dietary. W. must aid the repairative power of the system by furnishing the normal ingredients of the blood and tissues; and when combined in a medicine like Ayer's Sarsaparilla, the only genuine and reliable preparation of the kind, they bring about proper assimilation, eliminating the poisonous water-products, without which treatment must be of no avail. The mucous membrane lining the air passages are exceedingly apt to become deranged from vicarious action, in which cases Ayer's Sarsaparilla is extremely useful.

Tonics are indicated in diseases where there is depressed power, and in the treatment of catarrhal conditions no better selection of a true and efficient tonic can be made than Ayer's Sarsaparilla.

◆

HORSFORD'S ACID PHOSPHATE

Makes Delicious Lemonade.

A teaspoonful added to a glass of hot or cold water and sweetened to the taste, will be found refreshing and invigorating.

Dr. Chas. Woodhouse, Rutland, Vt., says: "I have used it considerably, and can testify to its great value in functional derangements of the nervous system."

◆

OVERHEARD AT THE SEASIDE.—"We are going to Worthing," said one pretty well-dressed girl to another. "What is there there?" "Oh! that's the place they create people—burn them you know."

◆

STATE OF OHIO, CITY OF TOLEDO, } *ss.*
LUCAS COUNTY }

FRANK J. CHENEY makes oath that he is the senior partner of the firm of F. J. CHENEY & Co., doing business in the City of Toledo, County and State aforesaid, and that said firm will pay the sum of ONE HUNDRED DOLLARS for each and every case of Catarrh that cannot be cured by the use of HALL'S CATARRH CURE.

FRANK J. CHENEY.

Sworn to before me and subscribed in my presence, this 6th day of December, A. D. 1886

{ SEAL. }

A. W GLEASON,
Notary Public

Hall's Catarrh Cure is taken internally and acts directly on the blood and mucous surfaces of the system. Send for testimonials, free. F. J. CHENEY & Co., Toledo, O.

☞Sold by all Druggists, 75c.

THE DATE PALM.

The date palm, like the cocoanut, must find a place with the half dozen trees which are of most value to the human race. It is the type of Phœnix, a small genus of Northern Africa, Southeastern Africa and tropical Asia. The date palm is a tree sometimes 100 to 120 feet in height, with a trunk covered with the persistent bases of the leaf stalks, and often surrounded at the foot by a dense mass of root suckers.

The trees flower in March and April, and as the male trees are generally less numerous than the females, the flowers of the latter are often fertilized artificially. In some parts of India and Arabia this is done before the flower-sheaths expand, an opening being made in the sheath of the female inflorescence, into which a few pieces of the male panicle are inserted. The fruit ripens in the autumn; and through the long cultivation a number of varieties, different in the color, shape, taste and size of the fruit, have been developed in Northern Africa and Central Arabia, which is supposed to produce the best dates.

The home of this tree is believed to be the whole arid region from the Eastern Canary Islands on the west, through the African Sahara, to the lower basis of the Euphrates. The date palm was thought by Brandis to have been introduced into India at the time of the first Mohammedan conquest of Sindh, in the commencement of the eighth century.

The date palm flourishes in the dry regions of Northern Africa and Western Asia, where it is exposed to excessive heat during the day and not infrequently to frost at night, although it cannot live without a certain amount of moisture in the soil. In Europe it is cultivated in Spain, where it was introduced by the Arabs, and where it produces fruit, and on the Riveria in France and Italy, although it rarely fruits there.

In southern Italy, Sicily, and Greece, the date palm is now not uncommon, although the climate does not enable it to produce fruit of good quality. On the island of Delos, before Homer's time, date palms sacred to Appollo had been planted; in Syria and Palestine the cultivation of this tree is older than the earliest historical records; and on the southern shores of the Caspian it was also once largely cultivated. It is cultivated and now reproduces itself in Sindh, in the Southern Punjaub, and in the Indian transindus territory. It does not, however, thrive in Bengal, where probably both the heat and rainfall are too great for it.

Not only does the fruit of the date palm supply millions of the human race and their beasts of burden with their article of food, but from its leaves the huts of many tribes are entirely constructed. The fibre which surrounds the base of the leaf stalks is manufactured into ropes and coarse cloth, and from the leaf stalks crates, baskets, brooms, and walking sticks are made. The centre of the young leaves is eaten as a vegetable, and from the sap, to obtain which, however, the tree must be destroyed, an intoxicating beverage is prepared.

The wood of the date palm is rather light, but is used in house and bridge building, and for various other purposes, although the fruit-bearing trees are so valuable that only the males of trees past the productive age are cut for timber.

The soil and climate of many parts of Southern California are well suited to develop the best qualities of this tree, and it is not improbable that the production of dates will soon become an important and profitable California industry. The date palm was first planted in California nearly a century ago by the Jesuit priest, who came into the State from Mexico, and their trees may still be seen in the garden of their mission-house at San Diego; and as long ago as 1877 dates raised in California, and produced from trees which were only twenty years old, were exhibited in San Francisco.

The date palm is hardy in some parts of Florida and on the islands of the Georgia coast, and large plants may be seen in the gardens on Cumberland Island, where they have been growing for at least fifty years. The climate, however, of the South Atlantic States is so wet in summer that the date palm will never be cultivated in any part of them except for ornament or as a curiosity.—*Garden and Forest.*

DIOVIBURNIA.

Chicago, Ill., May 3, 1894.

Dios Chemical Co,, St. Louis.—Since I tested the sample of Dioviburnia you sent me a year ago, I have prescribed it frequently, and find it of special value in Endometritis and Subinvolution.

Alfred H. Hiatt, M. D.

DRY PROCESS FOR COPYING LETTERS.

Who that keeps a copyof his letters (and everybody should) has not, time and again sworn, or wanted to swear, at the blurring and spreading of the ink in the present forms of copying apparatuses? Improvements have been made in almost every other department of office work, but the letter book and copy-press remain about as they were a quarter century agone. We are sure, therefore, that the commercial world will hail with delight the new copy-book that has recently appeared almost simultaneously in France and Germany, and which is used entirely dry.

The German achieves this end by impregnatingthe paper of the copy-book with a solution of common salt, while in process of manufacture, and the Frenchman by the use of magnesium chloride or calcined calcium chloride (a 10 per cent solution of the former or a 5 per cent solution of the latter). When a letter is to be copied, it is placed in the book in the usual manner and put under the press without further ado. The copies are always clear and bright, and the letter is left with the writing as clean and sharp as though it had never been copied.—*Nat'l Druggist.*

HOW ULTRAMARINE IS MADE.

Experiments appear to have been successful in the new process of manufacturing ultramarine, the best results being produced by the following proportions of raw materials: Forty-two pounds of sodium sulphide, twenty pounds sulphur, 110 pounds kaolin or china clay, 100 pounds soda as carbonate, or 40 pounds of caustic soda, these quantities yielding about 200 pounds of ultramarine blue. The clay and soda are first roasted together at a red heat, so as to affect partial double decomposition, and the product is ground; sulphur liquor is then made by dissolving flowers of sulphur in a solution of sulphide of sodium to saturation. The ground material is now made into a thick paste with sulphur liquor, the paste dried in an oven, and this dried mass, broken into small pieces, is roasted without access of air in a closed earthenware retort, first at a temperature of 250 degrees to 300 degrees Cent. for an hour, then at a red heat for eight hours, and finally just below dull redness in presence of a slow, regulated current of air, the retort to have become quite cold before being opened.

If you must draw the line at ~~Lard~~

and have, like thousands of other people, to avoid all food prepared with it, this is to remind you that there is a clean, delicate and healthful vegetable shortening, which can be used in its place. If you will

USE

COTTOLENE

instead of lard, you can eat pie, pastry and the other "good things" which other folks enjoy, without fear of dyspeptic consequences. Deliverance from lard has come.

Buy a pail, try it in your own kitchen, and be convinced. Beware of imitations. The genuine is sold in 3 and 5 pound pails by all grocers.

THE AMERICAN COTTON OIL CO.

Made only by
The N. K. Fairbank Company,
CHICAGO,
St. Louis. New York.
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San Francisco, &c.

50 YRS. THE ORIGINAL CORN STARCH. 50 YRS

KINGSFORD'S OSWEGO THE ORIGINAL STARCH

PUREST STRONGEST BEST

Highest Awards
CHICAGO, PHILADELPHIA, LONDON.
1893. 1876. 1851.

Try "Silver Gloss."

T. KINGSFORD & SON. Manufacturers. OSWEGO, N.Y. U.S.A.

SOLD ALL AROUND THE WORLD.

BEST QUALITY IS GOOD ECONOMY.

THE STANDARD OF EXCELLENCE FOR OVER FIFTY YEARS.

BUSINESS NOTES.

ANOTHER SHADE ROLLER IMPROVEMENT.

Of the many inventions and devices perfected by the manufacturers of the Hartshorn Roller, none at the present time seems to fill its place more acceptably than the Hartshorn Pin End. This was patented May 2, 1893, and is giving the utmost satisfaction wherever attached. Among its many advantages may be mentioned the fact that it does away with the usual three nails, so difficult to drive in a wooden roller, and by this means can be attached more quickly than any other end. Furthermore, being self-centering and permanent when driven into the roller, the purchaser can rest assured that when his roller is hung with the pin end, there will be no wobbling of the end, and that the roller must run true. The old brass cap end will often get loose and wobble, even after being forced on tightly.

We are putting these most desirable articles on our adjustable rollers without extra cost; on other rollers 25cts. per gross additional is charged, an absolutely nominal price, its manifold advantages considered.

When ordering be sure and specify if you desire this admirable little contrivance.

◆

WORLDS IN STAR LAND.

THE AWFUL IMMENSITY OF SPACE ILLUSTRATED IN A LECTURE.

Sir Robert Ball, astronomer Royal of England, recently delivered a lecture on the subject, "The Other Worlds in Star Land," to a juvenile audience in the theater of the Royal Dublin Society. In the course of his address he said: Were an electric wire wrapped seven or eight times as a girdle around this globe, the current would accomplish seven or eight circuits in the interval between two ticks of the pendulum of a clock. But now let us suppose that a telegraphic system is about to be instituted throughout the universe; let wires radiate from this earth, not alone to America or China, but let us imagine a wire from the earth to the moon, from the earth to the sun, and from the earth to some of the stars.

The moon is still so near us that the telegraphic message to our satellite would seem to pass almost instantaneously; it would not require much more than a single second of time. To the sun, however, the delay would be somewhat greater; in fact, you would have to wait nearly eight minutes. A message could not be sent to the sun and an answer received back in less than a quarter of an hour, in addition to delays of the ordinary kind. But now suppose that we are to send a message to one of the nearest of the stars.

As the telegraph clerk made the signal it would speed along the celestial wire with the frightful pace of 200,000 miles a second; but yet, such is the journey, that minutes and hours, aye, and even days and weeks, will pass over and the message has not reached the goal. The weeks run into months, the months spread into a year, but two years, nay, even three years will be necessary before that signal arrives at its destination. Such would be the problem of telegraphing to the nearest star. But there are stars in the sky to which the telegraph, traveling with this almost inconceivable speed, could not convey its message until after the lapse of 50 years and of 100 years.

There are stars so distant that were a telegraphic message sent to them at the time when William the Conqueror landed—800 years ago—the message would not have yet arrived. There are stars so distant that if the glad tidings of that first Christmas at Bethlehem, 1890 years ago, had been wired off at the time, the message would still be on its way. There are stars so distant that had the first man that ever set foot on this globe dispatched a telegraphic message to announce his advent, the intelligence would not have yet reached its destination. There are certainly stars shining in the heaven above us so distant that that much-vaunted telegram would require 1,000,000 years to communicate with them. Do you hesitate to accept these facts that I have described? Then know that the astronomers on whose authority they are based are those who have devoted their lives to the study of the stars, and they have only had one object in the pursuit they have followed, and that is the discovery of the truth.—*Detroit Tribune.*

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A heaping teaspoonful in half a glass of water, to be repeated once after an interval of thirty minutes, if necessary.

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PATENTED FRAUDS:

We have frequently had occasion to speak of the evil of the government issuing patents for inventions calculated to aid sophistication and fraud. The government should not foster but steadfastly set its face against such frauds. Not long since we showed up a patent for a process by which hickory bark could be used to imitate maple sugar. This time we find the following most just and timely article on the subject in the *National Druggist:*

SHOULD PATENTS BE GRANTED FOR SUCH THINGS?

"Not the least instructive and entertaining departments of our foreign exchanges are those columns devoted to a record of the patents granted. In looking over these we frequently strike upon patents for processes for the manufacture of articles or materials which can be used only in the preparation of fraud, and not infrequently this very object is announced in the patent in the most unblushing manner. Such, for instance, is a process recently patented in Germany for treating green coffee with soda or potash, 'by which means,' to quote the specifications, 'the said coffee gains 5 per cent in weight in the process of roasting.' The sole object, then, of this patent, is to add to the weight of the roasted coffee, without in any manner increasing its intrinsic value, and thus swindle the purchaser by making him pay for 5 per cent of inert (or worse) matter.

Another patented process, in the same line, is for treating the hulls of the coffee beans and stems of the coffee plant to obtain an extract which serves for impregnating inert material to be mixed with roasted coffee, and thus increase the weight of the latter. The specification of this patent names also the hulls of the cacao as material suitable for making this extract.

Still another patent in this direction is one for the production of so-called 'coffeinite,' of which according to the specification, '3 litres are to be poured over 50 kilos (100 pounds) of coffee. The grains swell, and from three to four days later one more liter of coffeinite is to be added.' The grains, when subsequently roasted, are treated with sugar, or a patent *glasure,* which gives very inferior coffee the appearance of being first-class. This process adds 10 per cent to the weight.

And so we might go on, taking patents for falsifying other articles of food as illustrations of the evil. Here is one for a substance to add to milk. The specification describes it as a "Process for emulsionizing fats *to be used in enriching milk,* or for any other purpose, and consists in beating up the fats, which may be of vegetable or animal origin, with a solution of gelatin, and of extending the solution in such manner that it may be made to contain any given quantity of fatty matter. Such a solution may be mixed with milk without the separation of the fatty matter.

The *Moniteur Scientifique,* in noting a similar patent, says: 'One scarcely knows at which to be the most indignant, the impudence of the patentees, or the moral obliquity of the government granting the patent, and thus lending official consecration to frauds so reprehensible as these.'

The fact that the government provides safeguards against the use of these patents, in the shape of police regulations, public analysis, etc., is no paliation of the offence, but rather an aggravation of it. It says, in other words, to the patentee, 'you must not use this patented article on our own people; but you are at liberty to sell it to all outsiders, and we will protect you in your rights as a discoverer and manufacturer'—*Caveat emptor,* let the buyer look out for himself and his own interests—which is the business motto of the rogue and swindler the world over."

* * *

Mrs. Honser (meditatively, at the museum). "I'd just like to know—"

Mr. Honser. "Know what?"

Mrs. Honser. "If that India-rubber man was ever one of the bouncing babies we read about in the birth department of the newspapers."

HOUSEHOLD.

TESTED RECEIPTS.

Every receipt here given is original, has been practically tested by the AMERICAN ANALYST and is, therefore, confidently recommended.

CREAM WALNUTS.

The white of an egg, with enough confectioner's sugar to admit being shaped into balls Flavor with vanilla, and put between two halves of walnut meats.

BUTTER CUPS.

Boil until it will harden in water, equal parts of sugar, butter and molasses. Pour on buttered tins, crease in squares, and set away to harden.

WHITE CANDY.

One quart granulated sugar, one pint water, two tablespoons of vinegar. Do not stir it, but boil as for molasses candy, and pull it. Have a dish near by with vanilla in it, and work in enough to flavor as you pull it. Set away to harden.

CHOCOLATE CREAMS.

Take the white of one egg, add an equal amount of cold water, and one small teaspoonful of vanilla, stir in confectioner's XXX sugar (which can be obtained at the large groceries) until it can be moulded with the hands into small balls the size of marbles; lay on buttered or waxed paper for one hour. Prepare the chocolate by breaking into bits, and putting it into a cup; set the cup in a dish of boiling water, and the chocolate will melt; dip the sugar balls into the hot chocolate, and let dry as before. These do not cost more than one-half those you buy, and are as good, if not better.

RAISIN OR NUT CANDY.

Press raisins or nuts into the prepared sugar balls, as directed for chocolates, before it hardens and you will have a simple and healthful candy for the little ones.

BUTTER SCOTCH.

One cup of brown sugar, one-half cup of water, one teaspoonful of vinegar, piece of butter the size of a walnut. Boil about twenty minutes; flavor if desired.

POP CORN BALLS.

Boil good molasses for twenty-five or thirty minutes, dip the corn into it, and press together in balls or cakes.

FIG OR RAISIN CANDY.

Take three pounds of sugar, and three pints of water, which put over a slow fire. When done, add a very little vinegar, and a lump of butter, and pour into pans where split figs or seeded raisins have been laid.

CANDIED FRUIT.

Take two pounds of fine loaf sugar, in lumps; dip each lump into a bowl of clear water, and put the sugar into a preserving kettle. Boil it down, and skim it until perfectly clear, and in a caramel state. Then take the fruits to be candied, such as large white grapes, oranges in sections, lemons and pineapples in slices, new figs, etc., all exceedingly nice put up in this way, with the previously-prepared syrup. Dip them into it while the candy syrup is quite hot; then place the fruit so treated in a cool, dry place. It will soon harden.

ORANGE OR LEMON DROPS.

Grate the rind of one orange or lemon, and squeeze the juice, taking care to reject the seeds, add to this a pinch of tartaric acid, then stir in confectioner's sugar until it is stiff enough to form into small balls the size of small marbles. This is delicious candy.

MAPLE CANDY.

Take two pounds of maple sugar, one pint or less of warm water; boil until it becomes hard when dropped into cold water or on a cold plate. Then add two or three tablespoonfuls of cider vinegar. When it is done pour thinly into tin pans.

MOLASSES CANDY.

Boil molasses over a moderately hot fire, and stir it constantly. When it is supposed to be done, which may be known when it becomes hard if dropped into cold water, then add a little vinegar to make it brittle, and such flavoring ingredient as may be preferred. Pour off into buttered tin pans. If the candy is to contain nuts of any kind, they should be placed in the pan before pouring the candy.

TWIST CANDY.

Boil six pounds of common sugar and one quart of water over a slow fire for half an hour without skimming. When boiled enough take it off; then with clean hands rubbed with butter, take that which is partially cooled and pull it the same as molasses candy, until it is bright; then twist or braid it, and cut into convenient lenghts.

LITTLE ROCK OR SNOW CANDY.

Boil loaf sugar down until it can be moulded into small balls or twisted. Pulling loaf sugar after it is properly boiled renders it snowy white.

PRESERVING AND CANDYING PEEL.

How it is Done in Italy, the Home of the Industry.

Italy is the home of the candied peel trade. Every inhabitant of Leghorn—the Italian center of the industry—is an amateur or professional fruit preserver, and as the methods they employ in preserving and candying vary very little from those followed in England, many of our readers—especially those who have quite recently written us on the subject of candied peels—will no doubt read the following article with unusual interest:—

The fruit is first halved, and placed in hogs heads or large casks filled with a fairly strong solution of brine; the fruit being halved merely to insure the thorough preservation of the rind by an equal saturation of the interior as well as the exterior surface. In these casks it arrives at the doors of the manufactory. The first process to which it is then subjected is the separation of the fruit from the rind. This is done by women, who, seated round a large vessel, take out the fruit, skilfully gouge out the inside with a few rapid motions of the forefinger and thumb, and, throwing this aside, place the rind unbroken in a vessel alongside them. The rind is next carried to large casks filled with fresh cold water, in which it is immersed for between two and three days to rid it of the salt it has absorbed. When taken out of these casks the rinds are boiled, with the double object of making them tender and of completely driving out any trace of salt which may still be left in them. For this purpose they are boiled in a large copper cauldron for a time varying from one to two hours, according to the quality of the fruit and the number of days it has been immersed in brine. When removed from this cauldron, the peel should be quite free from any flavor of salt, and at the same time be sufficiently soft to absorb the sugar readily from the syrup, in which it is now ready to be immersed. The next process to which the rind is subjected is that of a slow absorption of sugar. This occupies no less than eight days. It is needless to say that the absorption of sugar by fresh fruit in order to be thorough must be slow, and not only slow but gradual—that is to say, the fruit should at first be treated with a weak solution of sugar, which may then be gradually strengthened, for the power of absorption is one that grows by feeding. The fruit (and this holds good more especially with the rind) would absorb with difficulty, and more slowly and unequally, if plunged at once into a thick syrup, than if gradually treated with weak solutions, easier of absorption, and by which it has been thoroughly permeated first. It is a knowledge of this fact which governs the process now described. The fruit is then passed into what may be called the saturating-room, where on every side are to be seen long rows of immense earthenware vessels about 4 ft. high and 2½ ft. in extreme diameter, in outline roughly resembling the famed Etruscan jar, but with a girth altogether out of proportion to their height, and with very short necks and large open mouths. All the vessels are filled to their brims with citron and orange peel in every stage of absorption, *i. e.*, steeped in sugar syrup of, roughly speaking, eight different degrees of strength This is a process which occupies almost always eight days; and, as the syrup in each jar is changed every day, the vessels are naturally divided into groups of eight. With vessels of such great size and weight, holding at least half a ton of fruit and syrup, it is clearly easier to deal with the syrup than with the fruit. To take the fruit out of one solution, and to place it in the next stronger, and so on throughout the series, would be a toilsome process, and one, moreover, injurious to the fruit. In each of these jars, therefore, is fixed a wooden well, into which a simple hand suction-pump being introduced, the syrup is pumped from each jar daily into the adjoining one. How the relative strength of the syrup in each jar is regulated will be apparent from the following explanation. Suppose the group of jars to be numbered from 1 to 8 respectively; and assume No. 1 to be that which has just been filled with peel brought straight from the boiler, in which it has been deprived of the last trace of salt, and No. 8 to contain that which, having passed through every stage of absorption but the last, is now steeped in the freshly prepared, and therefore the strongest solution of syrup used in this stage. This is prepared daily, the syrup being of the strength of 30 deg., measured by the "provino," a graduated test for measuring the density of the syrup, and it is poured upon the fruit in jar No. 8. The next morning the syrup from this jar, weakened by the absorption from it, by the fruit of a certain proportion of sugar, will be pumped into jar No. 7, and so on daily through the series. Thus, No. 1, containing the fruit itself, regulates the strength of the syrup. Care is taken to prevent the syrup losing all its strength before the seventh day, or arrival at jar No. 1, by constant testing with the "provino," and in some cases a little stronger syrup must be added to the jar. A slight fermentation next takes place in most of the jars. But this, so far from being harmful, is regarded as necessary. Of course, it must not be allowed to go too far. There is yet another stage, and that, perhaps, the most important, through which the peel has to pass before it can be sufficiently saturated with sugar. It is now boiled in a still stronger syrup, of a density of 40 deg., by the testing tube; and this is done in large copper vessels over a slow coke fire—care being taken to prevent the peel from adhering to the side of the vessel by gentle stirring with a long paddle-shaped ladle. The second boiling occupies about an hour. Taken off the fire, the vessels are carried to a large wooden trough, over which is spread a coarse, open wire netting. The contents are poured over this, and the peel distributed over the surface of the netting, so that the syrup—not thickened to the consistency of treacle—may drain off the surface of the peel into the trough below. The peel has now taken up as much sugar as is necessary.

Now comes the final process, the true candying, or the covering of the surface of the peel with the layer of sugar crystals which is seen upon all candied fruits. To effect this a quantity of crystallized sugar—in Leghorn the same quality of sugar is used as is employed in the preparation of the syrup—is just dissolved in a little water, and in this the now dried peel, taken off the wire netting, is immersed. The same copper vessels are used, and the mixture is again boiled over a slow fire. A short boiling will suffice for this, the last process, for the little water will quickly be driven off, and the sugar upon cooling will form its natural crystals over the surface of the fruit. Poured off from these vessels, it is again dried upon the surface of the wire netting, as before described. The candying is now complete, and the candied peel is ready for the packing-room, to which it is carried off in shallow baskets.

In the packing-room may be seen hundreds of boxes of oval shape, and of different sizes, for each country prefers its boxes to be of a particular weight, Hamburg taking the largest, of 15 and 30 kilos, the United States of America preferring smaller, of 10 and 12 kilos. Britain takes the smallest, of five kilos, and one containing about seven English pounds. The wood of which the tops and bottoms of these boxes are made comes in thin planks from Trieste. The packing is generally done by women—the boxes being lined with white paper. They are then packed in cases of 100 kilos, ten of the smaller American boxes filling a case. The candied peel is now ready for export. Strange as it may seem, the fruit itself, and every ingredient and article necessary to the preparation of the candied peel, comes into Italy from abroad. The fruit of the best quality is from Corsica; Egypt furnishes the sugar, Britain provides the fuel, and distant provinces of Italy contribute a portion of the raw product and wood for the boxes in which the peel is exported. The province of Leghorn provides the labor necessary for the manufacture. Nor is this industry one which has fallen into Livornese hands from any specially-acquired local handicraft or skill. How, then, does this industry exist here in these days of keen international competition? No doubt it is mainly supported by the large drawback granted by the Italian Government upon the duty paid on the chief and dearest ingredient in manufacture—sugar. The Customs tariff in force imposes a duty of 76.75 lire upon 100 kilos of the sugar used (classed in the tariff as of second-class);

but grants a drawback of 60.50 lire upon 100 kilos of the exported article. Without this large measure of support there can be no doubt that this industry would immediately and wholly collapse. With it, even, it finds it difficult to hold its ground.—*Confectioners' Union.*

EDIBLE MUSHROOMS.

The demand for edible mushrooms is greatly on the increase, and consequently market prices are kept up, for the supply is hardly sufficient to meet the demand. As a matter of fact, although mushroom growing is one of the most profitable of enterprises, authorities alleging that something like 50 per cent profit can be made, yet our London market is largely supplied with the toothsome dainty from abroad. One cultivator on an extensive scale near Paris has made a large fortune by shipping mushrooms to London. And yet the French growths are far inferior to those of England, our climate being more suitable for this kind of cultivation; consequently it is not astonishing to learn that the English growers also find the enterprise so profitable that they do not care to say much about it, preferring to sell their mushrooms at a good price to the public. But mushroom cultivation is not a difficult art, and there is no reason why every hotel-keeper and caterer should not grow as much as he requires on his own premises, and thus add very considérably to his profits. One of the best systems for mushroom cultivation is that patented by Mr. Joseph Nepp, a civil-engineer, of Leipsic-Plagwitz, Germany. His beds are artificially prepared in such a way that indirect pulsation and aspiration are provided, and the growth stimulated by the chemical bed and the regulation of the temperature. These beds can be placed in cellars, sheds, special houses, or any locality most convenient. They are placed at various angles, so that a ground space of 10 square yards would give a bed space of 15 square yards, and ground space of 20 square yards a bed of 30 to 35 square yards, and so on. These beds require practically no attention, and they will go on bearing a plentiful daily crop from six to eight or even more months; indeed, instances of beds bearing for 12 to 14 months are not uncommon. The first outlay is not heavy—a permanent bed of 12 yards square, with a plentiful supply of plant stimulants, costing only £2, while beds containing some 250 square yards cost from £10 to £15. There is therefore no reason why caterers should not grow their own mushrooms all the year round, to delight their customers and add to their profits. It must not be forgotten that any surplus production will always find a ready and a good market anywhere.—*The Caterer*

DESTRUCTIVE WASHWOMEN AND LAUNDRIES.

Probably every person who has clothing "done up" at the laundries, public and private, has, at one time or another (probably very frequently), had some article come home in tatters, eaten up by some corrosive material used by the laundry people to save labor. If you make complaint you are told, with much show of indignation, that "no chemicals, nothing put pure soap and water" are used in *that* laundry. You know on such occasions that the party is lying, but you have no recourse, except to change laundries, and this is usually swapping the devil for a witch. In fact you feel that *you* have been "done up" quite as effectively as your clothing.

It is comforting to know that at last chemical ingenuity has shown itself equal to the task of proving the use of corrosives in the laundry; and that at least one laundry concern has come to grief. The hero of the affair was M. A. Schlumberger, who, for all his teutonic name, is a Frenchman, residing in Paris. He was recently consulted by a party who had been imposed on by his laundryman until forbearance ceased to be a virtue. Brand-new tablecloths, napkins, shirts, etc., would go to the laundry whole and return in tatters.

On looking at the articles, the chemist thought that they had been submitted to the action of Javel water. He therefore made a weak solution of methylene blue and placed one of the corroded articles in it. In a moment all around the burned spot the blue color fixed itself in the most intense manner, while the other parts were colored weakly. This was proof positive that his suspicions were correct, and the courts subsequently justified him by making the laundryman settle for the articles destroyed.

The next case was a little harder. The articles sent to the laundry were entirely new, but on being returned were found to be eaten out in spots. The test first named would not work in this case, and since there was no evidence of chlorine, the chemist concluded that an acid had been used. After trying two or three reagents, he had recourse to a weak solution of brasilein ($C_{16}H_{12}O_5$). He scattered a few drops of this around the burned or eroded spots, and had the pleasure of seeing the rose color changed to yellow, showing that an acid had been used. Subsequently it was shown that the clothing, having been thrown carelessly into some receptacle, had become spotted with iron rust, and this latter had been removed by oxalic acid. The acid had been carelessly used, and had eaten out the fabric wherever it was applied.

In the absence of any statute specifically bearing upon the subject, and in the presence of the fact that the use by the laundries of Javel-water, *liquor calcis chlorinatæ*, and other like preparations, oxalic acid, etc., is almost universal; and that the laundries, without exception, disclaim the use of these corrosive and mischievous preparations, it would seem that the offenders might be reached under the statute punishing the obtention of money under false pretences, or made to pay for goods thus destroyed under those regulating the mischievous and careless destruction of property. With the chemical means of proving the offense at hand, a conviction ought to follow. —*National Druggist.*

LACE CURTAINS.

THE EXACT WAY TO LAUNDER THEM TO LOOK LIKE NEW.

How to do up lace curtains is a vexed question with most housekeepers who view their dingy window draperies with distrust as to their own ability to renovate the lace, and a dislike to put it in other hands. It also costs a dollar or more a pair to have lace curtains laundered, and even at that price there is no assurance that the lace will not be badly drawn or slightly torn where the heavy pattern joins the net.

Three pairs of Irish point, two of Madras and some silk sash curtains lay before me dingy with dirt such as never penetrates to the cleanly farm house. To make them look as new as they really were was the task I set out to accomplish. Printed directions give no more definite information than to wash in the usual way, starch and pin to sheets which have been pinned to a carpet or mattress, or pin into frames made for the purpose.

I had no frames and ten curtains two and a half yards long would cover too many carpets and mattresses for convenience. So it ended that the curtains were washed as follows: As the Madras held a great amount of dirt in the heavy thread they were soaked several hours in clear luke-warm water. The point curtains were thoroughly shaken and then put directly into very weak, warm suds; if I had not owned a washing-machine which revolves like a churn the curtains would hade been punched and pounded lightly in a tub until the dirt had dissolved. In the machine, two curtains were washed at a time with no risk of tearing them. When ready to take out of the suds they were lifted out carefully being heavy with the water which was pressed, not wrung, out with the hands.

The Madras were rinsed in two waters, and no blueing used as the creamy tint is liked better than a blue white; they were put directly upon he line.

The point must have the ecru color retained and must also be starched. Our foremothers bleached and blued their laces to reach the standard of dazzling whiteness but now we think, creamy, even coffee colored, tints have a beauty as well.

Curtains of a "coffee and milk" shade give but little obstruction to the vision as one may see through them all that passes by without complement of being as easily seen from without. This is an advantage where all the light is needed in a room, and yet some seclusion must be secured. A pure, white lace is a decided interference to looking out, as any woman who has worn one of the little white face-veils can testify; it is blinding and dazzling.

To secure the coffee shade for the curtains in question a generous quantity of coffee was made and strained through a fine cloth. For the last or third rinsing, only enough water was used to soak one curtain through, and it was colored dark with coffee; after the curtain was laid in this water it was turned and patted rapidly to make it color evenly, then after as much water as possible was pressed out between the hands the curtain was dipped in thick starch, pressed dry as possible, and then hung upon the line. The lace should be carefully pulled out crosswise to make it dry in shape, but no extra time need be in picking out scallops and edges more than is needed to see that the starch has been distributed evenly. Color and starch each single curtain by itself, and do not leave it until it is on the line.

I used three rounding (not heaping) tablespoonfuls of starch to each pair of curtains, and divided the starch after it was made into portions that each curtain might be starched evenly. New coffee was added to the rinsing water of each curtain, and the result was a uniform color and stiffness.

The silk curtains were washed in lukewarm water in which a very little white soap had been dissolved, then rinsed several times, hung on the line after wringing lightly. In five minutes after hanging out and before any part had become dry these curtains were ironed with irons moderately heated, and the silk looked as fresh as new. The Madras and point were allowed to dry thoroughly then were sprinkled and set away over night before ironing.

Madras curtains should be ironed on the wrong side on flannel to bring out the pattern.

To iron lace curtains successfully brush well with a clean brush such as every good laundress keeps for straightening fringes; brush crosswise to remove the threads or lint which stick closely and to stretch the net of the lace. Then iron on flannel being careful to keep the border and plainer portion straight so that the curtain will hang evenly. It is a good half day's work to iron three pairs of nice curtains, but it is work that pays and it is much less work than pinning to carpets.—*N. E. Farmer.*

OLEOMARGARINE.

EXTRACT FROM THE REPORT OF THE DAIRY COMMISSIONER OF NEW JERSEY FOR 1893.

As to the question whether or not the sale of oleomargarine is decreasing, our inspections show a greater consumption of the article over last year. This is also true of the manufacture and sale of the article in the United States, as shown by the reports of the Revenue Department. For the first five months of the present fiscal year the Internal Revenue receipts for oleomargarine amounted to $214,357 *in excess* of what was received for the corresponding five months of the preceding year. This represents 10,717,850 pounds, or 5,308 tons. While there is no way by which we can obtain reliable statistics as to the quantity sold in this State, we know a larger number of persons are paying special government tax for the privilege of its sale; many large and reputable grocers among the number.

Before either the State or Federal laws were enacted nearly every grocer in the State was selling oleomargarine, and a large number of them sold it for butter. In 1886, both Federal and State laws were passed restricting its sale. The Federal law required every dealer to pay a special license tax. This enabled us to secure a complete list of the licenses issued, and for several years we have kept up an active prosecution against defiance and trickery in the business. As a result they have found it both uncomfortable and unprofitable to defy the law, and I am well satisfied with the improvement made in this line. I believe the grocers of our State are conducting the sale of oleomargarine on legal lines; the trouble lies mostly with the unlicensed dealers, and they have kept the officers busy resorting to all sorts of stratagems to bring them within the grasp of the law. There is a bill pending in Congress providing that each State shall have absolute control of the sale of oleomargarine. Should this become a law the executive officers can more readily restrict its sale, as now many private individuals receive it in defiance of our State laws and regulations, claiming protection under the decisions rendered by the United States courts regarding the importation of goods from one State into another in original packages. The courts have sustained them whenever suit was brought.

In answer to an oft-asked question, "Of what is oleomargarine or butterine composed?" I would say that Dr. Newton gave a full description of the manufacture of the articles in his report for 1886, including the process used by the inventor, Mege Mouries, in his factory at Poissy, France. In the United States, so-called oleomargarine is composed of oleo oil, lard and cottonseed oil. The oleo oil and lard are melted together, then is added the cotton seed oil. The whole mass is then churned with milk, run into ice, salted and worked the same as butter.

The oleomargarine industry owes its origin to the French chemist Mege Mouries, who, in 1870, first described a method of making artificial butter on a large scale. I give below the full text of Mege's patent as granted by the United States Patent Office, December 30th, 1873:

"*To all whom it may concern:*

"Be it known that I, Hippolyte Mege, of Paris, France, have discovered a new and improved process of transforming animal fats into butter, of which the following is a full, clear and exact description:

"The butter which is obtained from milk is produced by the cow elaborating her own fat through her cellular mammary tissues at the low rate of temperature of the body.

"The animal fat from which the butter-cells in milk are produced is composed chiefly of olein, margarin, and stearin, and small quantities of other substances.

"The natural process performed by the cow consists mainly, first, in separating the oleomargarine from the stearin without developing disagreeable odors or flavors in the oleomargarine; and, secondly, in producing a slight change in the oleomargarine, by which it assumes the character of butter.

"My invention, hereinafter described, is based upon a discovery made by me, that when the fat is rendered at a low temperature, considerably below that heretofore employed in the ordinary rendering of fat, it has the taste of moulten butter, and does not acquire that peculiarly disagreeable flavor heretofore supposed to be necessarily attached to melted fat or tallow, and which is designated as 'tallowy flavor.'

"I have succeeded in obtaining excellent results by rendering the crude fat at a temperature of 103 degrees F., which is below the temperature at which the tallowy flavor is created. The temperature may be raised above this point in order to facilitate the operation, provided care is taken to avoid attaining the temperature at which the tallowy flavor is created.

"The precise limit to which it is safe to increase the rendering temperature can be ascertained by trial under various circumstances with the different kinds of fat. The temperature must, however, be far below that heretofore ordinarily used in rendering fats when no such objects as I propose, to wit, the making of a butter-like product, was had in view. I do not think it would be safe to vary many degrees above that specifically indicated.

"I have also discovered that, in order to neutralize any fermentation of the fat before or during its treatment, the raw fat should, as soon as possible after the death of the animal, be plunged in a solution of fifteen (15) per cent of common salt and one per cent of sulphate of soda, the effect of which would be to prevent such fermentation.

In carrying out my process I first crush, grind or disintegrate the fat by any suitable machinery, such as rollers or millstones, in order to break up the cellular tissues in which the fat is contained in the animal, and thus cause it to be more easily melted or rendered by the application of low temperatures. This fat thus disintegrated is to be slowly raised to a temperature of 103 degrees F., in a vessel in which the temperature can be raised at will until the rendering shall be complete. The temperature, as before stated, must be so regulated that the rendered fat will have the taste of molten butter, and care should be taken not to heat it so as to induce the change which produces the usual disagreeable taste of melted fat or tallow, instead of the taste of molten butter, which temperature is considerably below that heretofore ordinarily used in rendering fat, and will be found to vary not many degrees above the point already stated.

"I also add to the fat while being rendered, for the purpose of aiding in this process, two liters of gastric juice to one hundred (100) kilograms of fat. This gastric juice is made by macerating, for three hours, half of the stomach of a pig or sheep, well washed, and three liters of water containing thirty grams of biphosphate of lime After maceration this macerated substance is passed through a sieve, and then added to the fat under treatment in the proportion of two liters to one hundred (100) kilograms.

"The separation of the organized tissues from the fat is aided by the introduction of salt during the rendering; and as soon as there are no lumps of fat visible in the kettle I add about one per cent of common salt. I stir it for some time. The rendered fat is then allowed to stand until it attains perfect limpidity, when it can be drawn off. By this means the separation is well made, and the organized tissues which do deposit are not altered. I then allow the melted fat to stand in a vessel, maintained at a temperature of about 86 degrees to 98 degrees, until the stearin is crystallized. The mixture of stearin and oleomargarine may then be put in a centrifugal machine, and by the operation of this machine the oleomargarine will pass through the cloth and the stearin remain within, or the mixture may be subjected to pressure in a press. The effect produced in either case is that the oleomargarine practically separates from the stearin and flows out. The oleomargarine thus separated from the stearin, when cooled, constitutes a fatty matter of very good taste, which may replace the butter used in the kitchen. If it is desired, however, to transform it into more perfect butter, I employ the following means: I mix the oleomargarine, as it comes from the press or centrifugal machine, with milk and cream, equal to 10 per cent of the weight of the oleomargarine, the temperature of the milk and cream being about seventy-one (71) degrees, and thoroughly agitate them together I then let the mixture become completely cold and solid, and then cause it to to be worked between rollers, which give it the homogeneousness and the consistency which are qualities of the natural butter.

"The above process of agitating the oleomargarine with milk is intended to be adopted when the butter is to be immediately used. If the butter is intended to be preserved, it will be better to mix the oleomargarine at animal heat with 10 per cent of its weight of water instead of milk or cream, and then agitate the two together, as above described.

"I have also found it expedient to mix with the cream or milk, in the first case above described, before agitating, or with the water in the other case above described, before agitating, a fiftieth part of mammary tissue, which is the udder of the cow, minced fine, a one-hundredth part of bicarbonate of soda and some coloring matter.

"It may be desirable to add ordinary butter, and this I do by mixing the oleomargarine and the ordinary butter together at a temperature of about 70 degrees F.

"What I claim as my invention, and desire to secure by letters-patent, is:

"1. The rendering of animal fat at a low temperature, substantially as above set forth, for the production of a fatty matter devoid of a disagreeable taste.

"2. As a new product of manufacture, fat rendered at the low temperature, substantially as above described, devoid of disagreeable taste.

"3. The combined process of rendering animal fat at a low temperature, and then separating the oleomargarine for the purpose of producing a material adapted to be used as ordinary butter for culinary purposes, or to be further treated for making more perfect butter, substantially as above described.

"4. As a new product of manufacture, oleomargarine obtained from fat rendered at a low temperature and separated from the stearin, substantially as above described.

"5. The agitating of oleomargarine with water or milk, for the purpose of making a more perfect imitation of butter, substantially as above described.

rain drops. Thus being cooled below zero and breaking through the cloudy stratum, they become charged anew with negative electricity, are coated with a new snowy layer and are again attracted by the cloud. Each hailstone, taking a wavy line, becomes enlarged by coating itself with alternate layers of opaque and transparent matter, and is ultimately thrown to the right or the left, occasioning thus the roaring noise which precedes the fall of hail, which then takes place in two parallel bands, separated from each other by a region of rain. These views agree well with the structure of hailstones as often observed, and with narrow linear extension of the hail over belts of country, and with the generally short duration of the storm.

As regards the structure of the hailstones, the author notices the existences of a gradual passage from snow to hail. He does not, however, seem to consider the fact that hail often accompanies a westerly or south-westerly wind (equatorial current), while snow rarely, if ever, occurs except along with a northerly or easterly wind (polar current).

Some of the forms of hail studied, fall without lightning, but with a strong negative potential, while the others are accompanied, in proportion to their size, with lightning and thunder.

ARTIFICIAL FRUIT SUGAR.

FROM U. S. CONSULAR REPORT.

Among the recent chemical discoveries in Germany which would seem to possess a practical interest for those portions of the United States where the preservation of fruits has become an established industry, is a process by which fruit sugar may be manufactured from beet juice, as an improved product specially adapted to certain purposes.

The inventor is Dr. O. Follenius, director of the beet-sugar factories at Hamburg and at Hattersheim, near Frankfort. His invention has been patented in Germany, (No. 35,487) and in some other European countries, but not, thus far, in the United States. The process consists, apparently, in the inversion of beet-sugar at a certain stage of its manufacture by chemical treatment into what is technically designated "Lavulose" ($C_6H_{12}O_6$), which is chemically identical with the natural fruit sugar developed, in greater or less degree, in most kinds of fruit—1.57 per cent in peaches, 6.26 per cent in plums, 10.79 per cent in sweet cherries, and as high as 15 per cent in some varieties of grapes. Fruit sugar differs, both in taste and chemical composition, from cane sugar, which latter belongs to the second group of saccharine substances, having the formula $C_{12}H_{22}O_{11}$.

The artificial fruit sugar manufactured by the Follenius process is a limpid white syrup of great density, containing from 75 to 76 per cent of sugar, and possessing among other valuable qualities, a rich, fruity flavor, as of natural fruit sugar, and the capacity to remain fluid and free from granulation for an indefinite period, notwithstanding its high degree of density. It is well known that ordinary white syrup containing 65 per cent or more of sugar, crystalizes and forms granular deposits, and when used for preserving fruits often "candies" to such a degree that the preserves have to be recooked to restore the desired smoothness and fluidity. The new artificial fruit sugar, on the contrary, remains smooth and fluid under all conditions.

But the quality which chiefly determines its commercial value is its power to assimilate, develop, and preserve the natural aromatic flavor of the fruit to which it is applied as a preserving material. Confectioners, fruit-packers, and skilled housekeepers who have tested it quite extensively during the past year in the preservation of cherries, strawberries, peaches, and various other fruits, pronounce it far superior for such purposes to any other known form of sugar, and cite among its other advantages the fact that it is always ready for use, and eliminates wholly from the factory all incidental processes of dissolving and refining the syrup. Finally, it corrects the tendency, so common in fruits preserved in ordinary sugar, to soften and assume a crude, sugary flavor, which not only injures the color and appearance of the preserves, but renders them cloying and disagreeable to the taste.

Although of recent invention, it is largely used in this country for perfecting wines, as well as in the manufacture of fine liqueurs, and is far superior to ordinary sugar for making lemonade or any preparation in which the saccharine principle is brought into contact with the acid juices of fruits. So far as is known, its use has not been extended, even experimentally, to the United States. It is made only at the sugar factory in Hamburg, where it is sold to the trade for $7.14 per 100 kilograms, which would be equivalent to 3¼ cents per American pound. As the manufacture of beet-sugar is assuming important proportions in the United States, and the conservation of fruits in the forms of jams, jellies, and preserves of various kinds is already established in Maryland, California, and several other States, the field would seem to be open and ready for a trial of what is here considered a highly practical and important improvement. The first step should be, naturally, to ascertain by actual trial whether the new material possesses all the merits that are claimed for it.

Any trustworthy American firm or person who is inclined to make the experiment can obtain, by addressing this consulate, free of cost, except for transportation, a sample of artificial fruit sugar for the purposes of trial. Should such test prove successful, the necessary facilities for obtaining a regular supply, or for establishing its manufacture in some beet-growing district of our country, could be readily arranged.

FRANK H. MASON,
Consul-General.

FRANKFORT, *March 13, 1894.*

DIOVIBURNIA UTERINE, TONIC, ANTISPASMODIC AND ANODYNE.

A reliable and trustworthy remedy for the relief of Dysmenorrhœa, Amenorrhœa, Menorrhagia, Leucorrhœa, Subinvolution, Threatened Abortion, Vomiting in Pregnancy and Chlorosis; directing its action to the uterine system as a general tonic and antispasmodic it is unexcelled.

FORMULA.—Every ounce represents 3-4 dram each of the fluid extracts: Viburnum Prunifolium, Viburnum Opulus, Dioscorea Villosa Aletris Farinosa, Helonias Dioica, Mitchella Repens, Caulophyllum Thalictroides, Scutellaria Lateriflora.

ST. LOUIS, MO., June 23, 1888.
I have used DIOVIBURNIA enough to satisfy myself of its merits. It is of unquestionable benefit in painful dysmenorrhœa; it possesses antispasmodic properties which seem to be exerted especially on the uterus.

Dr. H. Tuholske
Professor of Surgery, Post-Graduate School.

ST. LOUIS, MO., June 18, 1888.
I have given DIOVIBURNIA a fair trial, and found it useful as an uterine tonic and antispasmodic, relieving the pains of dysmenorrhœa and a regulator of the entire uterine functions. I feel authorized to give this recomendation.

L. Ch. Boisliniere
Professor of Obstetrics, St. Louis Medical College.

ST. LOUIS, MO., June 18, 1888.
For more than a year I have prescribed DIOVIBURNIA. In those cases that I have been able to follow up, found that they derived much benefit from its use in almost every form of dysmenorrhœa—especially the conjestive form. I am so pleased with it that I now prescribe it almost daily.

T. L. Papin M D
Physician in Chief and Gynecologist to St. John's Hospital.

ST. LOUIS, MO., June 20, 1888.
I very cheerfully give my testimony to the virtues of a combination of vegetable remedies prepared by a well known and able pharmacist of this city and known as DIOVIBURNIA. I have employed this medicine in cases of dysmenorrhœa, suppression of the catamenia, and in excessive leucorrhœa, and have been much pleased with it. I do not think its claims (as set forth in the circular accompanying it) to be at all excessive.

Jno. P. Johnson
Professor of Principles and Practice of Medicine, St. Louis Medical College.

DOSE.—For adults, a dessertspoonful three times a day, after meals. In urgent cases, where there is much pain, dose may be given every hour or two, *always in hot water.* Put up in Eight Ounce Bottles.

To any Physician, unacquainted with the medicinal effect of Dioviburnia and Neurosine, we will mail pamphlets containing full information, suggestions, commendations of some of the most prominent professors in medicine and various methods of treatment. Or to those desiring to try Dioviburnia and Neurosine, and will pay express charges, we will send on application a trial bottle of each.

DIOS CHEMICAL COMPANY, ST. LOUIS, MO.

WARM WEATHER DANGERS.

Warm weather set in this Spring considerably earlier than ordinarily; not continuously, of course, but with frequent days of unseasonably high temperature, separated by others which, though they seemed cold, were really so only comparatively. And the indications are, if the readers of meteorologic signs are right, that we will have a very hot summer. This is one of the situations to which the old adage, "fore-warned is fore-armed" will apply only measurably. No doubt we may provide ourselves with diaphanous raiment, contract for liberal ice supplies, and take steps for rigid quarantine protection against contagious diseases from abroad, but nothing will prevent our suffering much discomfort, and even danger, from the effect of atmospheric heat upon the winter-thickened blood still clogging our veins and stimulating the susceptibility—while weakening the energy—of our vital organs. We have ourselves provided the causes and must face the consequences of our imprudences. People used to consider it an imperative duty in spring, as a correction of winter-induced conditions, to take copious doses of a homely remedy, compounded of sulphur, cream of tartar and molasses, or to drink dandelion coffee and eat dandelion "greens." That all seems ridiculously old-fashioned now and really was not of much use compared with the greater potency of modern scientific remedies; still it no doubt did some good, and the purpose prompting it was more intelligent than the habit folks have now-a-days of preferring the pound of cure to the ounce of prevention.

Intestinal troubles are among the most common products of unseasonably warm weather, and are nature's protests against the feverish conditions prevalent in the system. They may go no farther than simple diarrhœa, but are also at least liable to develop into dysentery or bloody flux, and may even result in inflammation of the bowels. In every case, however simple it may seem, there is more or less inflammation of the delicate mucous membrane lining the bowels, and the extent of that unnatural condition determines the gravity of the affection. The fermentation of food in the stomach and intestines generally starts it—heat having induced such fermentation—and a prime necessity in treatment must be the prompt and thorough evacuation of the bowels—the casting out of the irritating foreign matter. That alone, however, is not enough to re-establish healthful conditions. The irritated surfaces must be soothed, the sympathetic inflammation in the liver and kidneys reduced, the toxic effect of deleterious secretions and torpidity from exhaustion corrected, and care must be exercised that no reactionary constipative effect follows the purgative treatment.

Still another class of warm weather ailments causing much suffering, though seldom fatal, except to infants, are the cutaneous eruptions, nettle-rash, hives and prickly heat. Local applications frequently have some effect in mitigating the tortures they cause, but cure is only possible through the thorough cleansing of the system and reduction of its temperature by the cooling influence of purgative and cathartic medicines.

In all cases where medicines of this class are demanded, the most thorough, safe and always reliable is Ayer's Compound Cathartic Pills. They not only cleanse the bowels and remove accumulated impurities from the overcharged liver and kidneys, but stimulate and strengthen those organs for the normal discharge of their functions. These good effects they produce without violence, and without the injurious consequences too often following upon the administration of drastic purgatives. They may be graduated so nicely to meet the individual requirements of patients that they will relieve the worst cases of constipation and at the same time are perfectly safe for administration to children. As an "after-dinner pill" Ayer's Compound Cathartic is a more efficient aid to digestion than any other. No family should be without a box of those pills during warm weather.

Everything connected with Butter

—churns, patters, tubs, firkins—ought to be washed with **Pearline.** That gets at the soaked-in grease as nothing else in the world can.

Things may **seem** to be clean when you've washed them in the usual way; but use **Pearline**, and they really **are** clean. It might make all the difference, sometimes, between good butter and bad. Wherever you want thorough cleanliness, or want to save your labor, the best thing to do is to use **Pearline.**

Send it Back Peddlers and some unscrupulous grocers will tell you "this is as good as" or "the same as Pearline." IT'S FALSE—Pearline is never peddled, and if your grocer sends you something in place of Pearline, do the honest thing—*send it back.*

383 JAMES PYLE, New York.

Indigestion

Horsford's Acid Phosphate

Is the most effective and agreeable remedy in existence for preventing indigestion, and relieving those diseases arising from a disordered stomach.

Dr. W. W. Gardner, Springfield, Mass., says: "I value it as an excellent preventative of indigestion, and a pleasant acidulated drink when properly diluted with water and sweetened."

Descriptive Pamphlet free.

Rumford Chemical Works, Providence, R. I.

Beware of Substitutes and Imitations.

For Sale by all Druggists.

Doing Good by Stealth: Missionary. "The money which you have given to the cause will be like bread cast upon the water."

Drummer. "Oh, that's all right. I shall charge it in my expenses."

And now the bows of the women's hats are reaching out into space to overshadow the dear creatures' sleeves.

Female frogs have no voice. But we have not heard that the government of Frogdom runs along any the less smoothly because of this fact.

WHEN WEARY AND LANGUID

Use Horsford's Acid Phosphate.

When you are weary and languid with the heat of summer, and strive in vain to keep cool, and your temper also, the use of Horsford's Acid Phosphate will materially aid you.

DR. E. CORNELL ESTEN, Philadelphia, Pa., says: "I have met with the greatest and most satisfactory results in dyspepsia and general derangement of the cerebral and nervous systems causing debility and exhaustion."

STATE OF OHIO, CITY OF TOLEDO, } ss.
LUCAS COUNTY }

FRANK J. CHENEY makes oath that he is the senior partner of the firm of F. J. CHENEY & Co., doing business in the City of Toledo, County and State aforesaid, and that said firm will pay the sum of ONE HUNDRED DOLLARS for each and every case of Catarrh that cannot be cured by the use of HALL'S CATARRH CURE.

FRANK J. CHENEY.

Sworn to before me and subscribed in my presence, this 6th day of December, A. D. 1886

{ SEAL. } A. W GLEASON, *Notary Public*

Hall's Catarrh Cure is taken internally and acts directly on the blood and mucous surfaces of the system. Send for testimonials, free. F. J. CHENEY & Co., Toledo, O.
☞ Sold by all Druggists, 75c.

THE CHINESE LANGUAGE.

Mr. C. Imbault Huart, in a manual for the acquisition of the spoken Chinese language, analyzed by the *Revue Scientifique*, gives some very interesting information about this tongue, concerning which very little is generally known, and that little very inaccurately.

Mr. Huart lays it down as a principle that there are two distinct languages in China, or, more accurately speaking, two form of the same language, the one written, the other spoken. The first consists of signs or characters of one or more strokes of the brush to each of which is conventionally attached a sound. As the keyboard of the human voice is limited, and as it was impossible for the cycle of Chinese knowledge to be so, it results that we find a host of characters that have identically the same sound, that is to say, that are pronounced alike, while at the same time having a particular sense. In consequence of this multiplicity of homophonous terms, this language cannot be spoken; it is only to be written. It has as its principle character absolute monosyllabism. The spoken language, on the contrary, is polysyllabic. Most of the words therein are formed of the aggregation of two or more sounds, to each of which, in the written language corresponds a single character. It is spoken but not written. This statement is worthy of meditation, and may be recommended to the consideration of those philologists who still insist upon classing the Chinese language as monosyllabic, and who perpetually confound the written with the spoken language—the signs with the words that they represent.

The principle character of every primitive language has been monosyllabism; there is no longer any doubt about that. Every language, monosyllabic in its infancy, has afterward developed by means of various processes, which, in the Indo-European languages, have been juxtaposition, attraction, composition, etc., and, in the Semitic languages, deflection; and thus polysyllabism has been reached. The same has been the case with Chinese. The spoken language, says Mr. Huart, had necessarily to originate before the written, and the Chinese characters were devised for figuring the idea that the sounds of the spoken language represented. But the list of sounds was quickly exhausted, and it soon happened that such or such a sound was found to answer to several characters. The sounds were limited, but the figurative signs could not be. The Chinese then conceived of tones and aspirations, and this produced a certain number of new sounds; but this did not yet suffice, and they had to have recourse to another system. The sound fou, which, in the spoken language, expressed the idea of "father," "happiness," "housewife," "ax," "to hide," "to lift," etc., could indeed be varied by the aid of tones, but not by means of aspirations. The Chinese then invented a simple, regular and ingenious lexicological system. They formed words by the method of composition, that is to say, they combined the simple terms or the elementary roots of the language according to fixed rules.

Mr. Huart gives an example that clearly shows how the spoken language passed from monosyllabism to polysyllabism. The sound fou, above mentioned, having several meanings, would have inevitably led to confusion. Upon this sound being heard isolatedly, it could not have been known what fou it was a question of: whether it concerned fou, "father," fou, "wife," or fou, "to hide," etc. In order to avoid such ambiguity, the Chinese added to fou, "father," the word ts'inn, "relative," and fou-ts'inn, "father-relative," then signified "father;" to fou, "wife," was added jenn, "human being," and fou-jenn then signified "woman" "wife;" before fou, "to hide" was placed mai, "to inter," and mai-fou took the meaning of "to place one's self in ambush," etc.

Mr. Huart states that the Chinese language is easy to learn. Its grammar is simple, and free from all those stumbling blocks that arrest the progress of students of the European languages. In Chinese there is no article, no gender, no declension and no conjugation. The relations of substantives, tenses and moods are marked by particles, which are very few in number. In itself, the syntax is quite simple, and has the logical order for its basis. The rules are few and easy to remember.

The Chinese themselves, even the most highly educated, have no knowledge of the grammar of their language. They do not know what a noun in the genitive, dative, instrumental or ablative is, nor what a substantive, adjective or verb is. They divide the words of their language into two great classes—the "full" and the "empty" words. The former are those that have a proper signification, such as nouns, and the latter are particles that serve merely for modifying the meaning of the former or for marking the relations that connect them. Their language once created, the Chinese have not known how to derive rules therefrom. The idiom has become fixed by usage—a word under the protection of which everything is placed in China. The most learned member of the "Forest of Pencils" (Institute of China) would be incapable of analyzing the first sentence presented to him or of explaining it grammatically. If he were asked why the sentence was constructed in such a manner rather than in another, or why such a word was found at the beginning and not at the end, he would never be able to tell. He would answer that he knew that it should be so, but that he did not know why. The Europeans and Americans are the only ones capable of analyzing a sentence, and they alone have been able to deduce rules of grammar and syntax in order to guide students and teach them to learn how to construct correct Chinese sentences.

AN IMPUDENT INFRINGEMENT OF LEA & PERRINS SAUCE.

Deputy United States Marshal J. D. Gore has completed the destruction of 8,000 bottles of bogus Worcestershire sauce, which has been stored at 114 Pine street, St. Louis, awaiting the final decree from Judge Thayer, of the United States Court. The wholesale destruction is the result of a suit brought against the Western Distilling Company by Lea and Perrins, Worcester and New York, to enjoin them from manufacturing an imitation of the original Worcestershire sauce. On April 12th, Judge Thayer handed down his decision and ordered that all the spurious sauce manufactured by the Western Distilling Company be destroyed. Marshal Gore with four assistants began the execution of the order a few days ago. Lea and Perrins have also obtained temporary injunctions against Davis, Rosenburger and Levy and Charles H. Dorsey, of Galveston, Texas, and Carson and Foley, of Houston, Texas. In the decision of the court it was held that the defendants had used the firm name, signature and wrapper of the plaintiff, and that every vestige of the wrappers, bottles, stoppers, etc., should be destroyed. Mr. D. E. Bennett, a representative of John Duncan's Sons, American Agents for Lea and Perrins, is in St. Louis, and has given the matter his personal supervision.

When?

Your husband will notice a great improvement in your cooking, *when*

You use COTTOLENE

Your house will not be filled with the odor of hot lard, *when*

You use COTTOLENE

Your doctor will lose some of his Dyspepsia cases, *when*

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Your children can safely eat the same food as yourself, *when*

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Your money will be saved, and your cooking praised, *when*

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Famous cooks, prominent physicians and thousands of everyday housekeepers endorse it. Will you give it a trial?

Sold in 3 and 5 pound pails, by all grocers

THE AMERICAN COTTON OIL CO.

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THE ORIGINAL CORN STARCH.

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Try "SILVER GLOSS."

T. KINGSFORD & SON. Manufacturers. OSWEGO. N.Y. U.S.A.

SOLD ALL AROUND THE WORLD.

BEST QUALITY IS GOOD ECONOMY.

THE STANDARD OF EXCELLENCE FOR OVER FIFTY YEARS.

LITERARY PARAGRAPHS OF INTEREST.

A paper of great interest to all admirers of our great national poets is the Rev. W. H. Savage's "Whittier's Religion" in the July *Arena*. Everybody who has read Whittier and knows of his simple Quaker life knows how much religion entered into the web and woof of his poetry, but the breadth and spirit of the poet's religion is shadowed forth in Mr. Savage's critical analysis in a way that cannot but put the poet and his work in a new light for many readers, even for some of his greatest admirers.

Professor Heindrich Hensoldt, Ph. D., who has spent years of research and study in Ceylon, Burmah and Thibet contributes the third paper in a fascinating series, "Occult Science in Thibet," to the July *Arena*. Mr. Hensoldt has taken a high rank as a scientific writer, and he has the rare power of making very scientific subjects fascinating to the general readers. These papers, giving glimpses of a strange world of life and thought which, while it was old when Homer sang, is new to us at the present day, are not only valuable to the special student of philosophy and religion and sociology, but are intensely interesting to all whose imaginations are cabined in our narrow Western world.

◆

The man who talks through his hat seldom makes his remarks felt.

In learning to play the violin a great deal of patience is required—of the people in the next house.

"Medicina," said a little girl to her playmate, "is something that makes you be careful not to catch cold again."

If an Egyptian desires a divorce, all he has to do is to repeat three times the words, "I put you from me," and the legal separation is complete. Surely, there can be little encouragement to go into the legal profession in Egypt. And then think how flat and insipid a newspaper report of a divorce case must be! Oh, these benighted creatures!

"Hello, Charley," I said as I took the three-year-old upon my knee. "Where's your mother?"

"Upstairs in her room."

"What is she doing?"

"Frizzing and kinking up her hair."

"And where's the girl?"

"Which one—Dinah?"

"Yes."

"Oh, she's up-stairs in her own room."

"Well, what is she doing?"

"Oh, she's trying to get the kinks and frizzes out of her hair."

If Chicago has the threatened coal famine for a few days she may manage to discover what the blue sky is like.

◆

Here is a capital story at Mr. H. M. Stanley's expense, printed in the Pall Mall Gazette and credited to Archibald Forbes:

Stanley had delivered an unsuccessful lecture. When his manager called on him about it, he heard an unearthly noise going on below. "What's that?" asked the manager. "That's my black boy; he always makes that noise when he is cleaning my boots." "All right," said the manager. "You divide to-night's lecture in half, and at the end of the first part have your black boy on to make that noise." The experiment was a triumphant success—such a success that the audience would not hear of his leaving off for Mr. Stanley to resume.

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OLEO IN MAINE.

Under this caption we find in the *The New England Grocer*, an item of news from Maine which shows how far unthinking prejudice will go to carry out a pet scheme of persecution. It should be remembered that this fight, though apparently made against what Secretary McKeen calls "the venders of imitation butter," is really against the poor working man, who is thus to be compelled to buy rancid grease butter at an exorbitant price because he is to be prevented by the worst kind of class legislation from buying a good, wholesome butter substitute at a price within his means.

Advices from Augusta, Me., dated July 16, state as follows: The effort of Secretary McKeen to stop the sale of oleomargarine in the state have aroused the venders of imitation butter. Stacy Hall, of Wm. J. Moxly & Co., Boston, wholesale butterine dealers, and A. T. Hall, of A. T. Hall & Co., Portland, retailers, spent the whole day with the secretary, Friday (last week), endeavoring to enter into a compromise by which the sale of this classs of goods in the state might be continued. The law under which Mr. McKeen is moving is sections 3, 5 and 6 of Chapter 128 R. S. as amended by Chapter 297, Public laws of 1885. "Offences Against the Public Health, Safety and Policy."

Sec. 3. Whoever, by himself or his agent, manufactures, sells, exposes for sale, or has in his possession with intent to sell, any article, substance or compound made in imitation of butter or cheese, or as a substitute for butter or cheese, and not made exclusively and wholly of cream or milk, or containing any fats, oils or greese not produced from milk or cream, whether said article, substance or compound be named oleomargarine, butterine or otherwise named, forfeits for the first offence $100, and for the second and each subsequent offence $200, to be recovered by indictment with costs. And it shall be the duty of every inspector of milk, sheriff, deputy sheriff and constable, as named in section five of this chapter, to institute complaint against any person or persons violating the above provisions of said third section.

Sec. 5. Every inspector of milk, deputy sheriff or constable shall institute complaint for violations of the two preceding sections whenever he has reasonable cause for suspicion, and on the information of any person who shall lay before him satisfactory evidence of the same. Said inspector or officer shall take specimens of suspected butter or cheese and cause same to be analyzed or otherwise satisfactorily tested. The expense of such analysis or test, not exceeding $20 in any one case, may be included in the costs of prosecution, and taxed and allowed to the officer paying the same.

Sec. 6. For the purpose of the three preceding sections, the term "butter" and "cheese," mean the products usually known by those names, and which are manufactured exclusively from milk or cream, or both, with salt and rennet, and with or without coloring matter.

Regardless of this law, which had its origin in 1885, the sale of oleomargarine has continued in the state, no effort having been made to stop it. Retail dealers are required to take out United States licenses, 28 of which were held in the state previous to July 1st, 1 in Augusta, 1 in South Gardiner, and several in Portland, Saco and Biddeford, Sanford, Lewiston and Bangor. It would not be surprising if these goods were sold to a considerable extent by parties not holding licenses.

It was suggested by one af the visiting gentlemen that local dealers might take orders for butterine and have the goods sent direct to the purchaser by the wholesale firm in Boston, or elsewhere outside the state without violating the law. It was suggested that this could be prevented on the ground that it came within the list of "offences against the public health, safety and policy."

Hon. A. M. Spear, of Gardiner, has been retained as counsel by Secretary McKeen in this matter.

* * *

That the burning of sulphur would destroy contageous disease germs is generally admitted. But in order to be effective, large quantities must be used, and the room rendered as nearly air tight as possible. Burning a pinch or small handful now and then will not accomplish anything, except to irritate the air passages of those who inhale the fumes.

HOUSEHOLD.

TESTED RECEIPTS.

Every receipt here given is original, has been practically tested by the AMERICAN ANALYST and is, therefore, confidently recommended.

DEVILED CRABS.

To the meat of one dozen hard shell crabs boiled fifteen minutes and chopped, add three tablespoonfuls stale bread crumbs, one-half wine glass cream, yolks of three hard boiled eggs, chopped, one tablespoonful butter, pepper and salt to taste. Mix all together and put back into the shells, sprinkle with fine bread crumbs, small bits butter, and brown in a quick oven.

CORN FRITTERS.

One pint grated corn, one-half teacup of milk, one-half teacup of flour, one small teaspoonful baking powder, one tablespoonful melted butter, two eggs, one teaspoonful salt, a little pepper. Fry in hot lard.

REAL PUFF PASTE.

One pound butter, one pound flour. Wash the salt out of the butter; mix the flour with a little ice water, and salt, roll on a board and fold in the butter; roll very thin and keep cool cutting with a knife.

PASTRY.

One cup shortening, lard and butter mixed; three cups flour, a little salt. Sift the flour, add the salt, and rub in the shortening. Use enough ice water to hold all together, handling as little as possible. Roll from you. One third the quantity given is enough for one pie.

CUSTARD PIE.

Four eggs, one quart milk, a little salt, and one-half cup of sugar. Bake with under crust only.

BLUEBERRY SHORTCAKE.

One and a half cups butter, one cup sugar, two eggs, one cup sweet milk, three and a half cups of flour, two teaspoonfuls baking powder, one pint of berries that have been washed. Bake about three quarters of an hour. Serve with sauce.

STEAMED BERRY PUDDING.

One cup sugar, two eggs, one and one-half teaspoonfuls baking powder, two cups of flour, one cup sweet milk. Steam about two hours.

HARD SAUCE.

One-half cup butter well beaten, stir in slowly one cup of powdered sugar, and beat to a cream. Pile on a plate and grate nutmeg over it. Keep it cool.

ORANGE SHERBET.

Soak one tablespoonful gelatine in half a cup of cold water ten minutes. Put one cup sugar and a scant pint cold water in a large pitcher. Cut six oranges in halves, remove the seeds, and squeeze all the juice into the pitcher. Dissolve the gelatine in half cup boiling water and add it to the mixture. Strain into the can and freeze.

BLACKBERRY SHERBET.

Wash one quart of berries or enough to make a pint of juice, add one pint of sugar and after standing till the sugar is dissolved, add a pint of boiling water and the juice of a lemon. Press through fine cheese cloth and freeze. Vary the sugar as the fruit requires.

IN A STEAM LAUNDRY.

There isn't much time lost in a laundry in any department. Thirty-five people, including drivers and receivers and deliverers of goods, will handle 2,000 shirts, 200 dozens of cuffs and collars, and 60,000 pieces of ordinary clothing, in a week; and, while doing this, they will take in a shirt, wash and iron it, and wrap it up for delivery, in two hours and a quarter.

The first operation is in the wash room. Here are seen rows of washing machines, circular. with an inner perforated revolving and reversing chamber for the clothes. The clothes are thrown into this, 125 shirts at a time, or the equal of that in other pieces, and clear filtered water run in on them, and the chamber started. Making a dozen revolutions in one direction, it automatically reverses and makes the same number in the other, the clothes falling back on the ribbed sides. Bar soap is something that is almost unknown in a steam laundry. The soap used is received in large barrels of clear white shavings, and is called "chipped laundry." One of these barrels makes eight of suds, being thrown into a large vat, and there boiled with water until it has been fully dissolved and reduced to about the consistency of buttermilk. This is always kept in stock cool, and poured into the washers while the inner chamber is still revolving, the motion being between the perforated shell of this chamber and the water-tight covering. The clothes are washed rinsed and blued in this tub, by the aid of valves: the first suds being warm, the second boiling. and the rinsing cold. The clothes are rinsed and then blued, the full operation requiring but an hour and twenty minutes.

From the washer the clothes go to the wringer, though this machine gets its name simply because it performs the same service as the household wringer. It looks more like a boiling kettle, though investigation shows it to be double, the inner one being perforated and revolving three hundred times a minute. The clothes are thrown in this, the power put on, and being thrown against the perforated sides are dried in a few minutes. The kettle takes in 100 large, heavy linen sheets at a time, drying them in thirty minutes.

From this the clothes go up stairs to the drying and starching room. Cuffs, collars, and shirts, and such articles as must be starched, are thrown into a revolving and reversing machine similar to the washer, and are then passed through an ordinary wringer if necessary, or hung up to dry. The dry room is surrounded by steam pipes, the "horse" on which the clothes are hung being pulled out on rollers while the clothes are being hung, and then pushed back. It matters not whether the sun is shining and the wind blowing, or the rain coming down a basketful at a drop, in twenty or thirty minutes the clothes come out dry. The unstarched goods go to the mangler, and the starched ones to the upper story to be ironed.

There are not many cheats in a steam laundry, but there is one in mangling which has never been detected. The mangler is a series of blanketed rolls, with a large central steel cylinder, kept very hot. The clothes are passed through this twice, coming out with every appearance of having been ironed. Two out of three ladies sending family washing to the laundry, accompany it with a note directing the laundryman to starch their tablecloths or spreads. Does he do it? Not often. Instead, he takes the clothes as they come from the wringer, straightens them out, and runs them through the mangle damp, giving them frequently an extra turn through the machine. They come out stiff and glossy, but without starch, and the housewife never knows the difference. The mangler is one of the greatest pieces of machinery used in the laundry. On large clothes or sheets two girls operate it, one on either side; and in the course of an ordinary day they will run through or iron 10,000 to 12,000 pieces. On towels and napkins four girls can work at a machine very comfortably. The mangler has a pressure of two hundred pounds to the inch, and if the girls ever get a finger in ahead of the cloth it is gone sure.

Starched articles of clothing go to another department after leaving the drying room. Cuffs and collars are ironed in a machine somewhat similar to the mangler; first, however, passing through a dampener, two rubber rolls running over a steel roll, the bottom of which is in water. The linen is then passed and repassed between the ironing rolls, the pressure producing the gloss. It then passes through a shaping machine, a very simple contrivance, similar to that used in other branches of trade for the same purpose. Turned-down collars, however, are submitted to a different process. They are run through a curious little machine, with an upper roller, to which water is conveyed. This runs along the seam where the bend is to be made, and passing on out the collar is bent without cracking. There is also a trick of this same kind in buttoning stiffly starched pieces, employed altogether in a laundry, and to a limited extent outside. The laundry girls call it "spitting on the backs"—inelegantly, it may be, but nevertheless expressively. The button-hole is simply wet slightly on the back side, and this done, the button may be slipped through the stiffest buttonhole with the greatest ease.

The ironing of a shirt is an interesting feature of laundry work. It is a curious point that an iron is never used except in finishing, and then only a perforated iron, which, while used in the same way as a sad iron, cannot be called by that name. Before its use, too, the shirt is ironed so that it would be acceptable to nine out of ten men. The shirt first goes to the bosom ironer. This is a young lady attired more like a school mistress than a laundry girl. The shirt is first fastened to a board, or an iron hand printing press bed, shaped like the old shirt board, clamped down at the neck and bottom, and run under a steel roller, heated by gas from the center, the gas flame being fanned by air until it is brought to a blue heat. Passing under this roller and back again, the bosom is pretty and glossy enough for a ball event. The shirt then goes to the band ironer; and the young lady who operates this must have considerable skill, more, indeed, than any one would imagine. Her work is simply to iron and shape the neck and wristbands between heated wheel rollers. Frequently a collar is sent back to the laundry, the owner saying it is not his, as it does not fit him. The trouble really is in the seemingly simple shaping and ironing of the neck-band. The important part of the work is then done, and the shirt goes to the body ironer. The machine used here is also a gas heated cylinder, which performs its work perfectly and very rapidly. Then the solitary ironer takes the shirt and finishes something that seems already finished. With the exception of this finishing, and the sprinkling of shirts, there is not a move about a steam laundry not done by machinery.—*Reflector.*

◆

It is said that all kinds of insects, so far as known, are afflicted with some form of parasite. Wonder if there are such things as spring poets, book canvassers and insurance solicitors in the insect world?

ADULTERATION.

A NEW DANGER.

One of the most commonly used articles in domestic medication is glycerine. Glycerine is generally obtained by extraction from soap grease by acid. If this acid contains arsenic as an impurity, the resultant glycerine will also contain it—unless it has been purified by the manufacturer. The results of selling or using such arsenical glycerine was well brought out in a case that has just been adjudicated upon in Leeds, England, a synopsis of which we quote from an English exchange together with some truthful comments.

At the Leeds Police-court, on July 6th, before the Deputy Stipendiary Magistrate, John Trimble, trading as Messrs. Hobson & Trimble, grocers and drysalters, 147, Kirkstall Road, Leeds, was summoned at the instance of the Leeds Corporation for a breach of the Food and Drugs Act. Charles Gill, the assistant of the inspector of food and drugs (Mr. Walker), went to the defendant's shop and asked for a bottle of glycerine from defendant's assistant. The latter asked, "Is it for inward or outward application?" and Gill replied, "I want it for a friend." He was then supplied with a pound bottle of glycerine, and Walker entering the shop, informed him of the reason of the purchase in compliance with the conditions of the Act. The assistant refused to take advantage of the offer to take a portion of the glycerine for separate analysis. The glycerine was afterwards found to contain two grains of white arsenic per lb. Mr. Bairstowe went on to refer to the section of the Act under which the proceedings were taken, and in reply to the magistrate said that he did not suppose anybody would take a pound of glycerine. But he did say that arsenic in the smallest quantities was injurious to health. He did not say that to take two spoonfuls would necessarily do any harm, but if a purchaser took home a bottle and allowed his child to take it, great risk would be run of injury to health. If a grownup person took the glycerine he would possibly have to take a considerable quantity before he was seriously injured. His argument was that if a person went into a shop and asked for glycerine he had a right to expect pure glycerine and nothing else, especially when it was labelled "pure glycerine," as was the case in this instance. Mr. Bairstowe, continuing, said that there was no doubt that in this case the article supplied was to the prejudice of the purchaser, and was not of the substance, nature, and quality demanded by him—The Magistrate: Was there any intimation on the bottle that it was for outward application only?—Mr. Bairstowe, in reply, said that that was not the case, and that if the defendant had adopted that course there would be an end to these prosecutions against him.—William Gill, assistant to the food inspector of the city, spoke to purchasing the glycerine in question from an assistant at Mr. Trimble's shop on May 19th last. It was a pound bottle, and contained the label "warranted pure." He paid tenpence for the bottle. He was asked whether it was for outward or internal use, and witness replied, "It is for a friend." The bottle produced was then bought by the witness, Thomas Scattergood, surgeon, said that glycerine was an article of common use and a medicine. He believed it was used largely in combination with lemon-juice for sore throats.—Mr. Bairstowe: I suppose if it does no good it does no harm?—The Magistrate: Is it harmless with two grains of arsenic?—Mr. Scattergood: I should say it would be very dangerous if taken indiscriminately internally. A teaspoonful would contain about a 50th part of a grain of arsenic, which would be the smallest dose of arsenic given medicinally.—Mr. Bairstowe: There is an element of danger? Witness: Yes.—Mr. Bairstowe: If used in making up prescriptions would the danger be greater or less.—Witness: I should say it would be greater, because it would be administered regularly. Witness was cross-examined at some length by the defendant with the object of showing that the quantity of arsenic in a pound of glycerine was so small that in the ordinary course no harm would be done to the purchaser. Mr. Scattergood denied this, and said he would not like glycerine of this kind to be used in the making up of his prescriptions.—Dr. Cameron, medical officer of health for the city, was next called. There was, he said, no difficulty in obtaining pure glycerine, and there was no reason why arsenic should be in it. A teaspoonful of the glycerine in question, given to a child, would contain more than the minimum medicinal dose of arsenic and would, therefore, be injurious. Of such a danger the public certainly ought to be warned.—By Defendant: Two grains of arsenic were the recognized quantity calculated to be fatal.—Mr. Fairley, the city analyst, was called, and said it was not a proper thing for glycerine to contain arsenic, nor was it necessary for it to do so. In cross-examination by the defendant, witness said that if pure acid were used in extracting the glycerine from the soap grease there would be no arsenic in it. He was not aware that the further distillation of the glycerine would materially increase the cost. Out of 18 samples tested by him only seven were absolutely pure, and some of the others contained arsenic in small quantities not of material importance.—The Magistrate: And you consider two grains per pound a material adulteration? Witness: Certainly, sir. This concluded the case for the prosecution. The Magistrate said that, in his opinion, the case had fully been made out and the defendant would have to pay a fine of £3 and costs. In this instance the amount was two grains per lb., and the prosecution has an added importance as showing in what grave dangers unsuspected adulteration might place any innocent member of the public. Previous investigations made by the vigilant Leeds sanitary authorities disclosed the fact that the ordinary commercial glycerine on sale in Leeds contained as much as 4½ grains of arsenic per lb. It is not idle supposition that, were any wife or husband to live together unhappily, as was the fact in the Maybrick case, or to have cause for disagreement, and a bottle of this glycerine were to be found in the wife's possession in case of his sudden death, this circumstantial evidence would go very far to cause her to either lose her life or be immured in prison. So far as we are aware, Leeds is the only place where articles such as glycerine have been examined to test their immunity from unsuspected poison. Fortunately, as a result of our disclosures, it will most probably be rendered impossible that such slip-shod, uncertain chemical methods as those pursued in the Maybrick case by the Crown should ever again be allowed to pass practically unchallenged in a Court of Justice. Discoveries like those at Leeds throw a sinister light upon the methods, and upon the character of the chemical evidence that consigned Mrs. Maybrick to lifelong imprisonment. They also show the grave public necessity for a regular and exhaustive examination of all foods and drugs.

◆

It is the quiet man who looks as though he might pass the hat at the temperance meeting who develops the biggest yell when the umpire decides in favor of the home team.

THE MYSTERY OF A PEPPERMINT LOZENGE.

Every day brings us fresh cause for wonder at the marvellous resources of the gentry who make adulteration a fine art. One of the greatest annoyances of railway travelling is the giggling miss or the vinegar-faced spinster sucking industriously at the potent-smelling peppermint drop.

A Lincoln manufacturer appears to have championed the cause of those who consider the peppermint lozenge a nuisance. On June 27th, Willen Sharp, grocer, Donington, was charged with having sold peppermint lozenges adulterated with raw potato starch. There were two summonses, the first charging the defendant with having adulterated the lozenges as an article of food, and the second charging him with having adulterated the lozenges as a drug, so as to injuriously affect its quality and potency. Mr. H. Snaith defended. Superintendent Crawford proved the purchase of the lozenges, and Mr. C. H. Southwell, the county analyst, said that the lozenges contained not less than 10 per cent. of raw potato starch. The lozenges of the British Pharmacopœia consisted of sugar, gum acacia, and the medicinal substance they represented. The use of starch would increase the bulk, weight, and the profit, and would take the place of much of the gum acacia. Gum acacia was worth from 1s. 6d. to 5s. per lb., and potato starch was worth less than 1½d. per lb. Raw starch was considered injurious, as tending to induce or to aggravate dyspepsia. Dr. Pilcher also gave evidence in support of the charge, and said that raw potato starch was injurious to health, and would have a depreciating effect on any drug with which it was combined. On behalf of the defendant, Mr. Snaith said he retailed the lozenges as they were supplied to him, and he was ignorant as to what they contained. Defendant said he had never had any complaint about the lozenges; and, on being pressed, stated that he purchased them from Mr. Poppleton, of Lincoln. The magistrates dismissed the case, on the ground that the defendant had acted in ignorance, but cautioned him against selling similar lozenges in the future.

There may, however, be those who are prepared to say a good word for the peppermint drop, and they will learn with a feeling of alarm that its supposed potency against "spassums" is thus tampered with, and that dire dyspepsia lurks in this sweetmeat.—*Exchange*.

BOGUS BRANDY.

The following clipped from *Food and Sanitation* shows that the trick of selling adulterated or better, factitious brandy under bogus labels is as much practiced in England as it is here. The only difference in the practice seems to be that in England the bogus labels are obtained by misrepresentation from the printer while here they are openly advertised and sold by would, be respectable houses.

A case has just been decided at Kreuzburg, Germany, in which Messrs. Martell and Co. had instituted a criminal prosecution against a merchant of the name of Max Matzdorff, of Landsberg. It would appear that the defendant had induced a printer at Breslau to imitate the labels of Messrs. Martell, by making him believe that he, Matzdorff, had their permission to have these labels made. In this way he secured a large number of labels, and, it was proved, had affixed them to some thousands of bottles containing spurious brandy, and carying imitations of Messrs. Martell and Co.'s branded capsules and corks. The case was fully established, and the defendant was sentenced to three months' imprisonment, and to pay the costs of the prosecution. The accused had agreed to ship two large consignments to this country; but none of the spurious article reached the public. The first consignment of 1,500 cases was detained by the Customs on arrival in England, and the second, of 500 cases, was seized, while in the hands of the carriers at Breslau, in consequence of the criminal prosecution instituted in the meanwhile. The parcel of 1,500 cases was sold by auction in London for the benefit of the Crown, after being stripped of all brands, labels, capsules, etc., and realized 3s. 1d. to 3s.3d. per one dozen case, exclusive of duty.

FATAL "CHERRY" BEER.

A fatal case of poisoning from drinking a popular beverage sold in bottles in grocery stores occurred in Patterson, N. J., on the 21st of July. The particulars we glean from the *Evening World* and are as follows: Rene Baker, six years old, and Nellie Baker, three years old, are dead, and Mrs. Morinus Baker and Mrs. Isabella Langenberg are dying from the effects of cherry beer which they drank last night.

The family lives at 22 East Main street.

When Morinus Baker came home from work last night he found his wife and Mrs. Langerberg stretched on the floor of the parlor unconscious.

One of the children lay dead on the stoop and the other in the hallway.

Mrs. Baker had sent to a nearby grocery store for a bottle of cherry beer, and the women and children drank it.

A short time afterwards all were seized with spells of vomiting and one by one they became helpless. The children were the first to succumb.

County Physician Johnson has ordered Coroner Wiley to hold an inquest.

The cherry beer was manufactured by a man who has a local reputation for the excellent quality of his temperance products.

Dr. Wiley is of opinion that the poison was generated by the cherry bark. He will hold an autopsy this afternoon.

MEDICAL.

PASKOLA

This is a proprietary article which has been much advertised lately and about the remarkable efficacy of which many well-known people have given certificates. It is made by the Pre-digested Food Company, a concern having an office and said to be identical with the party who have made Seven Barks, Mother Sigel's Syrup and Kaskine. Those who remember how this latter much vaunted preparation was advertised as superior to quinine and how the bubble was pricked by the analysis showing it to be worthless, may, perhaps, notice a similarity in the methods employed to introduce Paskola.

The literature published by the proprietors of Paskola needs only to be read by any one at all conversant with physiology to show the utter absurdity of the claims made for Paskola. The pamphlets entitled "Human Food and its Artificial Digestion," we quote from literally, reserving all comment:

"Paskola is only a pure starch pre-digested food, combined with natural vegetable ferments which aid the digestion of other food."

"Paskola would make you fat if you had not a stomach."

"Paskola contains a vegetable trypsin ferment which converts the albumen into peptones in the stomach."

"No stomach will digest uncooked starchy food."

"Paskola saves your digestive organs from having to work. When it reaches the intestines it is absorbed at once."

"Albumens are not fattening. If they don't agree with you don't eat too much of them. Then you won't need pepsin."

These are certainly new theories in physiology. We have no desire to cavil, but it certainly is allowable to ask the reader how he can possibly imagine a man without a stomach, as suggested in the second paragraph quoted, and also to make a mental calculation how many sales are lost to the anti-fat people by the malapropos arrangement of nature supplying a man with a stomach. Every physician will inform you that the human stomach never digests starchy food, but leaves the intestines to do that. Another remarkable peculiarity of this little pamphlet is that it apparently teaches that albumen can be entirely dispensed with, in fact it states that albumen "is the least important of the foods we digest." Now, everyone knows that starchy food is only fuel, while the albumen is life supporting. In another place this pamphlet says "Paskola is a flesh-forming food." Now as we have shown that pre-digested starch is not a flesh-former, we strike a snag here. The question arises, therefore, not what Paskola is claimed to be, but what it really is. An analysis will settle that question. Such an analysis appears to have been made in a very painstaking manner. Dr. G. Eccles of Brooklyn publishes the results of his examination in the *Druggists' Circular*. He believes that from the action of all the reagents applied to Paskola that it can be practically duplicated by the following formula:

Glucose syrup..............	..1 pound
Hydrochloric acid............	50 drops
Sulphurous acid U. S. P. (freshly prepared)	6 or 8 drops.

And remarks, "Since the last-named substance is a gas in solution, the quantity present in any given bottle of Paskola must be expected to vary from all other bottles. No two can be alike. It is the presence of these acids in Paskola that preserves it indefinitely from fermentation. Glucose, when not so protected, readily changes into alcohol and vinegar.

"As to the physiological effect of glucose as an article of diet: In the disease called diabetes, the naturally digested starch does exactly what it is claimed all pre-digested starch is sure to do. It goes immediately, and without modification, into the blood. To pre-digest starchy food would seem, therefore, to encourage diabetes, one of the most insidious diseases known to medical science. For years it saps the vitals of its victims and finally slays them. All life insurance companies fear it, and instruct their medical examiners to look out for it among those apparently well. All such persons are dangerous risks that they will not take.

"The general public has a decided bias against the use of pre-digested starch under its proper name (glucose). This aversion has a rational basis, although, doubtless, with many it is excessive. So strong is the feeling in opposition to its use that although tons of it are consumed daily, those who use it in their goods are generally careful to conceal its presence.

"The pre-digesting of starch changes it into glucose. The proper name of pre-digested starch is therefore simply and plainly glucose. Confectioners use large amounts of it in making their cheapest and poorest candies. Most of it is said at present to be a product of corn starch.

"In making glucose, the digesting of the starch is done with some mineral acid, such as sulphuric or muriatic, and not as in the intestines, with a ptyalin-like ferment. The manufacturers afterward remove the acid and leave glucose syrup. The lightest colored and heaviest syrup is considered the best.

"Some early medical writers seemed to think it a quite wholesome article, but experience has convinced most investigators of the subject to the contrary. Many of the headaches of young anæmic girls and many of the troubles of school children generally are believed now to be in great measure products of the use of glucose candy.

The proprietors of Paskola say of it: "It is the best starch food. It is composed of the finest and most nourishing flours, artificially digested." The only reasonable interpretation of this passage would seem to be that "starch food" and "nourishing flours" mean the same. Nourishing flours do contain starch, but they are very different from starch. Paskola seems to be a pre-digested starch, but not a pre-digested flour. The claim that it is composed of the finest and most nourishing flours, artificially digested, "is not sustained by my analysis. I could find no gluten nor any digestion product of gluten in it, and I am not satisfied that it is 'the outcome of the most modern discoveries of modern science,' as is declared by its makers."

There remains little to be said, and that is that Paskola is rather high-priced for its principal ingredient, according to Dr. Eccles' analysis, which we have no reason to doubt, is common glucose, costing about two cents a pound. If people are willing to pay a dollar for glucose, and take the risk of dosing themselves with it at the peril of contracting diabetes under the belief that they are purchasing a dollar's worth of life-giving and flesh-forming panacea, they may do so. Our advice is "Don't."

AN "ELIXIR OF LIFE"

For a few years past Prof. Vaughan has been engaged in some very important experiments in the State Laboratory of Hygiene at the Michigan University. These experiments relate to subjects of very great importance to the public welfare. One purpose is to accomplish the end which at one time it was thought had been reached by Dr. Koch, namely: The preparation of a substance which can be introduced into the body and which shall antagonize germs of disease such as those of consumption. Prof. Vaughan is now able to prepare a substance which there is reason to believe may be similar to the one normally used by the human body in battling with the germs of disease. His experiments are not yet conclusive as to the usefulness of this substance for the cure of disease, but they tend to prove that by its use immunity to the contraction of germ diseases is enhanced. The substance consists of the neclgi of cells; and, since it is probable that the spleen is the organ in the body which takes the most active part in battling with germs of disease, he has given special attention to the preparation of "nuclein" made from the cells of the spleen.

Prof. Vaughan has presented this subject before the medical societies in this country, and he now goes to the International Congress of Hygiene which meets in September, this year in Budapesth, Hungary, where he expects to meet the scientists engaged in this and other lines of scientific work, who will be there from every civilized country. From the discussions which will there take place, he expects to gain much knowledge which will enable him to continue and extend his exceedingly important work. He goes as a delegate from the Michigan State Board of Health, and the Board expects Prof. Vaughan to contribute, for the welfare of humanity, fully as much information as he will receive. This is not Prof. Vaughan's first trip across the ocean. His first one was some years ago for the purpose of studying bacteriology in the laboratory of Prof. Koch. Three years ago he attended the International Congress of Hygiene which then met in London, England. His present trip is regarded as of much greater importance in connection with public-health work.

THE ALMIGHTY'S TREATMENT OF NERVOUS DEBILITY.

When Elijah was utterly depressed in mind, and believed that his brave attempt to create a reformation in Israel had completely failed, and that there was nobody left that cared for the true God, and was ready to die of a broken heart, then God gave him a quiet desert far from distraction, then a good sleep, then a comfortable meal, then sleep again, then more food, and then a six weeks' vacation. After that he recovered his spirits and was greatly improved in his religious feeling, his faith in God, as well as in bodily condition. One's religious moods may often depend on the condition of the body, if not one's religious life.—"*The Independent*."

THE THERMOMETER AT THE SICK-BED.

DOCTOR DYRENFURTH.

Falkebladet, Christiania, No. 14.

Every fever produces exhaustion and reduces the flesh, not only on account of the non-supply of food, but by self-consumption, first attacking the fat, then the albumen. If the fever continues, all supply for combustion soon gives out and the patient dies out from exhaustion. Doctor Behse weighed daily a typhus patient, and found that in the first five days of the second week at an average temperature of 40 degrees, he decreased 3.5 kilograms, in weight; in the next five days at a temperature 39–38 degrees, 2.1; and in the last five days at 38–37 degrees, 0.1.

When Galileo discovered his thermometer, he had no idea of the great importance the measurements of bodily heat would have for medical science. The first to see its use in that direction was the Dutch physician, Boerhave. He used it for the measurement of fever heat, and his disciples, van Switen and de Haen in particular, made important observations. The Englishman, Currie, also learned much by means of the thermometer. But, as usually happens, when the time is not ripe for the use of a great discovery, it is soon forgotten. The employment of the thermometer in febrile disease was not continued. The instrument did not find its true place till the physicians discovered the true relation of physical life and combustion of fuel. A methodical examination of fever patients by means of the thermometer was first introduced by Traube and von Barensprung in Berlin, and Wunderlich in Leipzig, in the years 1851–52. A French critic called its employment a useless scientific play, only possible in German hospitals, where there were more doctors than patients.

The thermometer has become an indispensable instrument in the hands of the physicians. At a glance the doctor can tell the patient's present condition and his prospects. No hand is sensitive enough to do that. Usually the Centigrade thermometer is used. It is placed directly upon the artery in the armpit, where it is kept in place by pressing the upper arm tightly against the body, and holding the under arm upon the chest. In twenty minutes the mercury reaches its greatest height. The time may be shortened by previously heating the instrument to 40 degrees. In reading the degree it is necessary to fasten the eye immediately upon the height of the quicksilver column, and not to begin to read from above or from below, because the rapid change in temperature from the patient's armpit will reduce it quickly several points. An exact knowledge of the status of the fever can only be obtained by recording the figures every morning and evening. In that work the patient's family can assist the physician materially. The themometer record has of late become the most important factor in the case of the sick. The following table shows the rise and fall of the temperature of a fever patient:

	Morning.	*Evening.*
July 1st	37.6 deg	38.5 deg.
“ 2d	38.1 “	38.9 “
“ 3d	38.6 “	39.2 “
“ 4th	38.8 “	39.3 “
“ 5th	39.2 “	39 7 “
“ 6th	39.2 “	39.9 “
“ 7th	39.7 “	40.3 “
“ 8th	39.8 “	40.1 “
“ 9th	39.7 “	39.9 “
“ 10th	39.4 “	39.6 “
“ 11th	39.2 “	39.4 “
“ 12th	38.9 “	39 1 “

From the 1st to the 7th there is a continuous rise in the fever with a slight decrease in the morning. On the eighth day there is a decrease of 0.2 degrees, and as the decrease is regular the disease ends happily.

A word of advice in conclusion: Do not trouble the patient with examinations. They make him restless and anxious.

RHEUMATISM.

At the July meeting of the State Board of Health of Michigan, held at Lansing July 13, 1894, President Wells said that he had long noticed that the weekly health bulletins published by the State Board show that of the twenty-eight diseases reported upon by the regular observers around the State, rheumatism is usually at the head of the list as causing the most sickness in Michigan. Mr. Wells raised the question whether there was anything that this Board could do in the way of publication of information which might tend to lessen the amount of sickness from rheumatism.

Dr. Vaughn said he knew of nothing tangible yet relating to the restriction and prevention of rheumatism which could be imparted to non-professional people. Rheumatism is a term used for many aches and pains. He thought no work should be undertaken now which will interfere with the tremendous effort being put forth by this Board for the restriction and prevention of tuberculosis, the most important of all diseases. Doctor Baker said that the State Board has already done much for the creation of knowledge respecting the causation of rheumatism, which knowledge is essential to a proper action for its prevention. But we must wait for an advance in two lines of investigation not much entered upon by this Board—that of bacteriology and that of physiological chemistry. Several times in the past it has seemed that facts were going to crystallize into a tangible theory, but just as appearances were most favorable ideas of medical investigators regarding the causation of rheumatism have changed. Much has been learned from the Sickness Statistics collected and published by this Board. Curves have been made showing that rheumatism has a direct relation to meteorological conditions. The facts in this office show that tonsillitis follows the cold atmosphere and that rheumatism follows tonsillitis. It is quite probable that if rheumatism is a germ disease tonsillitis prepares a soil favorable to the reproduction of the germ and a way for its entrance into the body.. We are waiting for the bacteriologists to find the specific organism. So far as I know only the pus-forming germs have been found in connection with rheumatism, and it is quite possible that they are the cause of the disease; if so its increase following the sore throats caused by "raw" cold weather is explained by the facts on record to the State Board of Health Office. Diagrams exhibiting the rise and fall of rheumatism by seasons of the year prove that its course is similar to that of small-pox, consumption and other diseases known to be caused by germs, and known to enter the body by way of the air passages. Secretary Baker suggested that a committee might be appointed to investigate the subject and report to this Board at some subsequent meeting. Doctor Vaughn said that at present all is speculation as to the causation of rheumatism, but he thought it quite probable that Dr. Baker's idea of the causation of rheumatism may be nearly the proper explanation, but that he would explain rheumatism as being a result of an over exertion or unusual destruction of the cells of the body in trying to protect the body from an attack of a germ disease; in other words it is an over-drugging on the part of nature in order to throw off an attack of some germ disease. The uric acid which is not excreted rapidly enough and which accumulates in the body and causes the rheumatic pains, is formed by the action and destruction of cells. On motion of Prof. Fall it was voted that Doctor Baker prepare and read at a future sanitary convention a preliminary paper on the causation, restriction and prevention of rheumatism.

NEPHRITIS IN ITS SURGICAL ASPECTS.

Dr. E. L. Keyes (*Amer. Jour. Med. Sci.*) discussed "Nephritis in Its Surgical Aspects" before the Congress of American Physicians and Surgeons at the meeting held in May at Washington. The paper is replete with information of a valuable character. There are two most important points dwelt upon at the close of the paper—points that should be carefully considered by every physician in the treatment of these cases. He says: I cannot terminate this study without here laying emphatic stress upon, and calling especial attention to, the value of abundantly flushing the urinary passage with bland mineral waters of the diluent variety, as a means of flooding out both pus cells and micro organisms mechanically in many forms of chronic suppurative disease all along the urinary tract.

I know no single agent that possesses so much power for good. The enemy is decimated by this method of warfare, and can be taken at a disadvantage. I refrain from speaking the names of the mineral springs that possess this power—and there are many of them—because the commercial spirit of today prostitutes such utterances.

The character of the mineral ingredient in the spring is not material. All that is required is that one may be able to stomach the water freely—to drink a gallon, two gallons a day, or more, and that the water shall not affect the bowels

A number of such waters exist. Distilled water does not do the work, nor does rain water. Ordinary clear spring water fails. In selecting a mineral water, it is only necessary to find a cheap one that may be consumed in vast abundance without a feeling of repletion—one that will pass rapidly through the kidney, having no influence upon the individual other than the diuretic one.

And, in closing, I wish further to emphasize two prognostic points; one is the common error of believing that the presence of pus in the urine is capable of accounting for a considerable amount of albumin. One constantly hears this expression: "Albumin is the urine accounted for by the pus." Surely this is true of a trace of albumin—but only of a trace. An admixture of blood with the pus, or of blood serum coming from an excoriated tumor in the bladder, or from an ulcer—this will account for albumin in quantity; but when there is no tumor, no stone, no ulcer in the bladder, there may be very considerable amounts of pus with barely a trace of albumin, and, if under such physical conditions the amount of albumen be relatively large, it usually means pyelitis—implication of the kidney in interstitial or parenchymatous change, and by so much becomes a factor of importance in prognosis. Anything over one half of one per cent by weight of albumin in urine, however purulent—if there be no blood in the specimen, no tumor, no stone, no ulcer in the bladder—becomes a factor in the question of prognosis when the point of the expediency of an operation comes to be considered. The cases may be assumed to have already reached a degenerative stage, and the chances of lighting up surgical kidney by operative interference below are relatively great.

He summarizes briefly the following conclusions:

1. Healthy urine is sterile.
2. Purulent urine is always microbic.
3. Microbic infection takes place from within the body by a number of methods in the course of disease; it is often brought about by instrumental maneuvers on the part of the surgeon.
4. A healthy organism and vigorous bladder may cope successfully with microbic invasion, and rid itself spontaneously, or with a little aid, of all damage arising therefrom—showing little or even no inflammatory response.
5. A suitable condition of the patient's soil is essential to the propagation and perpetuation of inflammatory phenomena upon the urinary tract—after microbic invasion
6. The condition, intensified by traumatism and physical weakness, notably of the degenerative variety, is most intense when there is vesical distension with atony, and when the ureters are dilated, and the kidneys involved in the changes incident to tension below—namely, atrophy and sclerosis above, with or without surface catarrh.
7. Under these circumstances surgical pylonephritis is most likely to declare itself as a result of microbic infection from below (occasionally from above)—in the course of supurative disease or after operative interference.
8. Asepsis, antisepsis and sterilization of urine are ends to be aimed at in genito-urinary surgery—but, like all other greatest goods, not yet attained in perfection. Much, however, can be done by local means in a prophylactic and curative way, little by internal medication, and possibly as much or more than by any other means by flushing the urinary passages with natural mineral waters.

Note: We have only to add, in order to make this article practically useful to our readers, that the ideal water here described is clearly to our mind, that of the Buffalo Lithia Springs. Dr. Keyes may have deemed it advisable to avoid this mention in order to prevent his name being used to advertise a mineral water but we deem it of greater importance to prevent inferior or worthless mineral waters being used.

INVENTIONS, SCIENCE, ETC.

VINEGAR.

HENRY LEFFMAN, M. D.

This word, derived from the French *vinaigre* literally, sour wine, refers to an accessory food, of ancient and extended use, which is a dilute solution of acetic acid obtained usually by fermenting alcoholic liquors. In the last number of *Household News* some account was given of the transformations which sugars undergo into alcohol and carbonic acid gas, and a discussion of the production and composition of vinegar follows naturally from a study of fermentation.

If the quantity of alcohol formed in any liquid is considerable, or if it be distilled so as to separate all the unchanged organic matters, and thus obtain in the distillate a mixture consisting practically of alcohol and water only, chemical changes are not likely to occur in the liquid; but when the quantity of alcohol is small, and especially when other organic matters are present, or the liquid is exposed freely to air, a new fermentation occurs and the liquid becomes sour. This new fermentation differs in an important particular from the alcoholic fermentation. The latter, as was pointed out, does not involve any addition to the fermentation, that is, the sugar simply splits up into alcohol and gas under the influence of the ferment. The sum of the weights of the two equals that of the sugar (assuming it to be grape sugar—glucose). The formation of vinegar, on the other hand, involves an absorption of oxygen, and the process cannot go on in a vessel entirely deprived of air. Nevertheless, the action is dependent on living organisms, and to obtain the best results we usually have regard to the conditions on which these organisms thrive most satisfactorily.

The quality of the vinegar, that is, its sourness, color and flavor, will, of course, be influenced by the nature of the liquid in which it is produced; thus the vinegar formed from an infusion of malt will differ from that formed from cider, and these again from the vinegar formed from wine. There will be, however, no difference as to the acetic acid itself, the substance on which the essential properties of the vinegar depend. Acetic acid, from whatever source prepared, and we will see below that there are several practical sources, is the same, and we must infer from this that the preference given by various persons to malt, cider or wine vinegar, are largely fancies dependent on taste, and that the different forms can replace each other without serious results. There will be, however, some difference in the strength of these different forms, depending on the original alcoholic strength, and this difference will influence the sourness and the proportion to be used in certain preparations. Allen, a well-known English authority, gives wine vinegar as containing from six to twelve per cent of acetic acid, which will make a very sour liquid; cider vinegar from three and a half to six per cent and malt vinegar between five and six per cent.

To promote the transformation of alcohol into acetic acid it is necessary, as noted above, to allow free access of air. The alcoholic liquid must be somewhat dilute, since both strong alcohol and strong acetic acid are antiseptics, that is, prevent the growth of the minute organisms on which the fermentation depends. In practice, the most favorable results are secured by allowing the dilute liquid wine, malt liquor, whisky, etc., to flow in thin streams over beech shavings in casks provided with perforated false bottoms and tops. The fluid trickling over the shavings is exposed to the air freely, and the opportunity to absorb oxygen is afforded. If the air supply is insufficient, an intermediate product, known as aldehyd, is formed, which has a disagreeable odor and is otherwise objectionable. Frequently more than one transmission through the apparatus is needed to complete the conversion.

ADULTERATIONS OF VINEGAR.

Although an article of low price and easy manufacture, vinegar has not escaped adulteration and substitution. Like all liquids consisting largely of water, an easy and frequent adulteration consists in diluting it. To avoid this, many countries have enacted laws regulating its strength, that is the proportion of real acetic acid, which is the essential ingredient. Five per cent of this acid may be taken as a fair average limit, below which a vinegar should not fall. The English Society of Public Analysts has, however, fixed as low as three per cent as a minimum limit, which will allow a rather weak article to pass unchallenged. It is, however, by the substitution of a cheaper acid for acetic that the most marked adulteration of this article occurs. Sulphuric acid is one of the cheapest chemicals, and it is of an intensely sour taste, even when largely diluted with water, hence it affords a very tempting opportunity to the dealer, who may dilute his vinegar with water so largely as to diminish perceptibly its sourness, and then may restore this property by the careful addition of a amall amount of common sulfuric acid. Indeed, an imitation vinegar may be made up from the acid, although this would require some addition of coloring and flavoring material, as the dilute acid alone would not be acceptable. This form of adulteration cannot be satisfactorily detected except by laboratory processes, but, fortunately for the housekeeper, it is apparently not now common.

The more frequent forms of vinegar adulteration are either the manufacture of it from distilled spirit and subsequent addition of coloring matter to give it the appearance of normal article, or the similar coloring of a liquid made by adding water to a strong acetic acid, the latter being made by the distillation of wood.

A so-called malt vinegar is made by the fermenting of malt by yeast, distilling the liquid by which a dilute alcohol is obtained and converting this into vinegar by the oxidation process before described. The distilled liquid is colorless and without any dissolved solid matter, and it cannot be sold directly as malt vinegar since consumers know that the genuine article is colored. The addition of coloring matter, even burnt sugar, to vinegar is forbidden by many governments, and to avoid these penalties the colorless liquid is treated with scorched malt, by which considerable color is imparted to it. It is, of course, a question whether such a method produces a true malt vinegar, but it runs the gauntlet of official supervision.

Another method of manufacturing vinegar depends on the fact that acetic acid can be obtained cheaply by the distillation of wood, and when freed from the tar and other disagreeable by-products, is obtained in a form adapted to the preparation of a liquid of any desired strength. The following, from Brannt's work on the manufacture of vinegar and acetates, will be interesting and will explain the difference between the true and false article:

"For consumption on a large scale, especially where only a body of an acid taste is required, the use of so-called 'vinegar essence' (that is, pure 80 or 90 per cent. acetic acid), prepared from wood, and which, when properly diluted, furnishes ordinary vinegar, will undoubtedly supercede vinegar prepared from alcohol, it being considerably cheaper. Notwithstanding that the price of vinegar essence is decreasing every year, in regions where wood is plentiful and cheap, its manufacture is a well-paying industry, on account of the many valuable by-products (tar, wood-spirit, charcoal) obtained besides acetic acid. Even at the present time, for all industrial purposes where acetic acid is required—as, for instance, in the manufacture of tar-colors—that obtained from wood is used, and the quantities consumed in the fabrication of table vinegar become larger every year. The manufacture of vinegar from alcohol and alcoholic fluids will, nevertheless, continue to flourish, because the product obtained from them actually possess different properties from the pure acetic acid prepared from wood. Vinegar obtained from pure alcohol, and still more so that from fermented fruit juices, as wine, cider, skins from pressed grapes, or from malt, contains, besides acetic acid and water, small quantities of bodies which, on account of their being analogous to those occurring in wine, may be designated as 'bouquet bodies,' and which give to the vinegar an agreeable smell and taste, entirely wanting in acetic acid prepared from wood. These properties are so characteristic that anyone gifted with a sensitive and practiced sense of smell can at once distinguish pure acetic acid vinegar from that prepared from wine, cider, beer, etc. By the addition of volatile oils or compound ethers an agreeable odor can, of course, be imparted to vinegar obtained by diluting pure wood acetic acid with water, but it is impossible to produce the harmonious bouquet peculiar to vinegar from alcohol or fruit juices, similar relation existing here as between wine and so-called artificial wine. The latter can be made so as nearly to approach, as regards taste and smell, genuine wine, but a connoisseur will at once detect the difference."

The question of the wholesomeness of these imitation articles is difficult to answer. Vinegar fulfills the functions of producing an acid taste, which is acceptable to many persons, and also has a preservative action. Both these effects are equally obtainable from the imitation article. We must lean, therefore, to the view that while a preference will generally be given to the true vinegar, such preference has little to do with effects on digestion, except in so far as palatebility is of assistance. There are, indeed, facts to show that palatability does have a bearing on the digestive relations of foods.

Some incidental points in the adulteration of vinegar may be noted. It may contain copper, lead and tin, derived from the vessels in which it has been prepared or kept. Lead is by far the most dangerous and is, fortunately, not commonly found.

Vinegar eels are scarcely regarded as objectionable, and yet from what we are now learning of the relation between minute organism and disease, a sterile vinegar seems to be best.—*Household News.*

CARBONIC ACID IN THE ATMOSPHERE.

Secretary Baker, as Committee on Climate, etc., presented the subject of the "Decrease of the amount of Carbonic acid gas in the atmosphere," and remarked that some twenty years ago he had asked the board to authorize a series of regular and accurate chemical analyses of the atmosphere with a view of determining whether there was any change in the amount of carbonic acid gas in the atmosphere by seasons of the years, and by long periods of years. The subject is important now, and may become more so, in relation to the public health. Doctor Baker quoted from the *Chemical News*, London, August, 1893, as follows: "As evidence that the composition of the atmosphere is still slowly changing, it is stated that the last and most careful determinations of carbonic acid in the air have shown a decided decrease (0.05 to 0.03) in the last fifty years." On motion of Dr. Baker, the subject was referred to Prof. Fall, of Albion, with request that he should report at the next meeting of the Board, relative to methods and cost of the proposed series of tests of the atmosphere.—*From proceedings of the Michigan State Board of Health.*

MISCELLANEOUS.

THE RABBI'S PRAYER.

[From ' The King of the Schnorrers," by I. Zangwill.]

Not much before midnight, in a Midland town—a thriving commercial town, whose dingy black streets swarmed with poverty and piety—a man in a soft felt hat and a white tie was hurrying home over a bridge that spanned a dark, crowded river. He had missed the car, and did not care to be seen out late, but he could not afford a cab. Suddenly he felt a tug at his long black coat-tail. Vaguely alarmed and definitely annoyed, he turned round quickly. A breathless, roughly-clad, rugged-featured man loosened his hold of the skirt.

"'Scuse me, sir—I've been running," he gasped.

"What is it? What do you want?" said the gentleman, impatiently.

"My wife is dying," jerked the man.

"I am very sorry," murmured the gentleman, incredulously. "I'm not a doctor."

"No, sir, I know. I don't want a doctor. He's there and only gives her ten minutes to live. Come with me at once, please."

"Come with you? Why, what good can I do?"

"You are a clergyman?" The wearer of the white tie looked embarrassed. "Ye-es," he stammered. In a—in a way. But I'm not the sort of clergyman your wife will be wanting. I am a Jewish minister."

"That don't matter," broke in the man, almost before he could finish the sentence, "as long as you're not a Catholic. Oh, don't go away now, sir." His voice broke piteously. "Don't go away after I've been chasing you for five minutes. I saw your rig-out—I beg pardon, your coat and hat—in the distance just as I came out of the house. Walk back with me, anyhow," he pleaded, seeing the Jew's hesitation. The man's accent was so poignant, his anxiety was so apparently sincere, that the minister's humanity could scarcely resist the solicitation to walk back at least.

"Why don't you go to your own clergyman?"

"I've got none," half apologetically. "I don't believe in nothing myself. But you know what women are! Betsy goes to some place every Sunday almost; sometimes she's there and back from a service before I'm up, and so long as the breakfast is ready I don't mind. I don't ask her no questions, and in return she don't bother about my soul—leastways, not for these ten years, ever since she's had kids to convert. We get along all right, the missus and me and the kids. Oh, but it's all to come to an end now," he sobbed.

"Yes, but my good fellow," protested the minister, "I told you you were making a mistake. You know nothing about religion; but what your wife wants is some one to talk to her of Jesus, or to give her the sacrament or the confession or something, for I confess I'm not very clear about the forms of Christianity."

"Oh, but you believe in something," persisted the man.

"Hm! Yes, I can't deny that," said the minister, "but it's not the same something that your wife believes in."

"You believe in a God," don't you?"

The minister felt a bit chagrined at being catechised in the elements of his religion.

"Of course," he said fretfully.

"I knew it," cried the man in triumph. "None of us do in our shop, but of course clergymen are different. But if you believe in a God, that's enough, ain't it? Here is the house."

The minister conquered a last impulse of mistrust, and looked around cautiously to be sure the was unobserved. Charity was not a strong point with his flock. Even if they learned the truth, he was not at all sure they would not consider his praying with a dying Christian akin to blasphemy. On the whole he must be credited with some courage in mounting the black, ill-smelling, interminable staircase. He found himself in a gloomy garret at last, lighted by an oil lamp. A haggard woman lay with shut eyes on an iron bed, her chilling hands clasping the hands of the "converted" children, a boy of ten and a girl of seven, who stood crying in their little nightgowns. The doctor leaned against the head of the bed. He was a big-brained, large-hearted Irishman, a Roman Catholic.

"You are not too late," replied the doctor.

"Thank God," said the atheist. "Betsy, old girl, here is a clergyman."

The cloud seemed to pass off the blind face, and a wave of wan sunlight to traverse it; slowly the eyes opened, the hands withdrew themselves from the children's grasp, and the palms met for prayer. "Christ Jesus," began the lips mechanically.

The minister was hot with confusion and aquiver with emotion. He knew not what to say, as automatically he drew out a Hebrew prayer-book from his pocket, and began reading the Death-bed Confession in the English version on the alternate pages. "I acknowledge unto Thee, O Lord, my God, and the God of my fathers, that both my cure and my death are in Thy hands." As he read, the dying lips moved, mumbling the words after him. How often had those white lips prayed that the stiff-necked Jews might find grace and be saved from damnation.

The prayer went on, the mournful monotone thrilling through the hot, dim, oil-reeking attic, and awing the weeping children into silence. The atheist stood by reverently, torn by conflicting emotions; glad the poor foolish creature had her wish, and on thorns lest she should live long enough to discover the deception. There was no room in his overcharged heart for personal grievance just then. "Make known to me the path of life; in Thy presence is fulness of joy; at Thy right hand are pleasures forevermore." An ecstatic look overspread the plain, careworn face; she stretched out her arms as if to embrace some unseen vision.

"Yes, I am coming --Jesus," she murmured. Then her hands dropped heavily upon her breast, the face grew rigid, the eyes closed. Involuntarily the minister seized the hand nearest him. He felt it respond faintly to his clasp in unconsciousness of the character of his touch. He read on, "Into thy hand I commend my spirit. Thou hast redeemed me, O Lord God of Truth. Amen and Amen." And in that last Amen, with a final gleam of blessedness flitting across her sightless face, the Christian toiler breathed out her life of pain holding the Jew's hand. There was solemn silence, the three men becoming as little children in the presence of the eternal mystery.

SCRIPTURAL TIMBER.

The Gopher wood of Scripture denotes a kind of cypress. It was light, and not subject to rot, and was often used in shipbuilding. Of this species of cypress, brought from Assyria, Alexander the Great raised the great fleet he prepared.

Hobuim, or ebony, is mentioned by Ezekiel in his account of the commerce of ancient Tyre; such importations were evidently Indian or African productions, and reached Syria through Arabia. The wood was in high esteem among the ancients for its hardness and fineness of grain and glossy black color. Ebony was first seen at Rome on the occasion of Pompey's triumphal procession after the conquest of Mithridates. As to the myrtle, there is no difference in the rendering of different translations; that which is translated "myrtlen" may always be taken to mean that tree. At the Feast of Tabernacles, celebrated on the return from Babylon, when the inhabitants of Jerusalem constructed booths of the branches of trees, we find, says the *Timber Trades Journal*, mention made (along with the palm, the olive, and other trees) of the branches of the "wild myrtle trees," which were brought from the neighboring hills. The prophet Isaiah foretells that in the coming golden age of Israel the desert will be planted with "cedars, acacias, and olive trees," and that instead of the thorn hedge shall grow the fir tree, and instead of the heath the myrtle, and as regards the last named, no doubt he refers not to the wild but the cultivated tree of that name. There are both wild and cultivated olive trees, and the Arabic and Syriac languages express them by the same word. Cultivated olives reach the height of 20 ft. or 30 ft. The trunk is knotty, the bark is smooth, and of an ashy-gray color. Its usefulness in furnishing oil need not be dwelt upon. The tree reaches a great age, and is commonly propagated by slips, and bears fruit very copiously. Palestine has from the earliest times been as rich in olives as are now Italy, Spain, and the South of France. David had an overseer over his olive-yards, and Solomon gave to the laborers sent to him by King Hiram (besides other provisions) twenty thousand baths of oil. Oil was one of the productions which the Israelites carried to the markets of Tyre, and being always green, the olive tree was employed as an emblem of uninterrupted prosperity. The libneh or storax tree which grows wild in Syria, Arabia, Asia Minor, and also in the south of Europe, resembles the quince tree, and mention is made in Genesis that speckled rods from this tree were placed by Jacob in the watering troughs of the sheep. This tree grows to about 12 ft. high, and puts forth a number of slender branches, and a gum is obtained by incisions on the stem of the tree, which was employed in the preparation of powder for incense. It has been contended that this tree is identical with the white poplar, but the weight of evidence is against the contention.

In the narrative respecting the speckled rods which Jacob placed in the watering troughs of the sheep, mention is made of rods of lus. The corresponding Arabic term denotes the almond tree, a tree of the peach family, and mostly esteemed for its fruit, as the wood does not seem to be of use in the arts. The willows spoken of in Leviticus as "growing by the brook," were amongst the trees whose boughs were to be used in the construction of tents at the Feast of Tabernacles. Job mentions "willows by the brook," and it is hardly necessary to recall the lament of the Psalmist on the captivity at Babylon, when the Israelites hung their harps on the willows. We also find the Armon, or the Oriental plane tree, well known in these times. In Ecclesiasticus, wisdom is compared to a plane tree shooting its high boughs aloft; and here, again, Jacob placed rods of this tree in the watering troughs of the sheep. The stem grows very straight, and has a smooth grayish bark, which comes off every year, and the wood is white and hard. The tree abounds in Syria and Palestine. Cassia was one of the articles of which the holy anointing oil was composed and probably was the production of the wild cassia, which differs from the true cinnamon tree. The bark is of a pale brown color, and of a more bitter but less aromatic taste than cinnamon. Its use as a perfume is described in Psalm lxv. The wood of the cinnamon tree was imported by the Hebrews from India through the Arabian Gulf. The pomegranate tree is indigenous to Syria and Palestine, and is mentioned by Moses. Its juice was made into wine, but, except for the shade it affords, and the models its fruit afforded for many ornaments, both in dress and architecture, it does not seem to have been capable of further utilization. The boards and part of the furniture of the tabernacle made in the wilderness were made of shittah wood, or the wood of the acacia tree. The word employed denotes especially the Egyptian acacia, the only tree in the Arabian desert from the wood of which boards could have been made. This tree commonly attains the height and strength of the willow, and is sometimes as large as a walnut tree, and has wide-spreading branches. The bark is of a grayish-black, the wood yellowish, and the leaves small and shaped like a lentil. The wood is not only very durable, and not liable to injury from water, but is also very light, and hence it was admirably adapted for a movable and portable structure like the Mosaic tabernacle.

The teil tree, in the original Hebrew, means "a strong tree." Our translators are guided by surrounding circumstances whether to translate the word oak or terebinth; but when mentioned in the Old Testament (as in Isaiah vi., 13), it generally means the latter. The wood of the tree is hard and white, and yields quantities of resin and turpentine. The wild fig tree of Palestine and Egypt, or sycamore, resembles the white fig tree. The wood is very strong and durable, for it suffers neither from the sun nor water. Its color is yellow, inclining to ochre, with flesh-colored streaks. It is to this wood that Isaiah refers when he represents the presumptuous Israelites as saying, "The sycamores have fallen, but we will change them into cedars." That is to say, "In place of common houses, built of the wild fig tree, we will erect palaces of cedar." That sycamores abounded in Palestine, appears from the fact that in the first book of Kings and second book of Chronicles it is said that in the time of Solomon, cedars were as common in Judea as sycamores in the vale.

The treashur, or box tree, is among the woods of Lebanon enumerated by Isaiah as furnishing wood for the erection of the future temple at Jerusalem. The palm-tree yielded wood which was spongy and had course fibres, adhering but loosely, yet it was, and is, very durable, and to this day is used for the beams and pillars of houses. In the chambers of Egyptian temples, beams of palm-wood in a state of good preservation have been found, though they were at least three thousand years old. The tree used to be more abundant in Palestine than now. In early times, Jericho was called the City of Palm Trees, and in the present century some have been observed in the neighborhood, the remainder having been cut down by the Arabs for the building of huts. It is not proposed at present to give any account of the vine, or any shrubs produced in Palestine. Only those trees have been selected which may reasonably be supposed to be of interest to the reader. It must be borne in mind that in deciding upon the name of the tree meant in the text, the translators had frequently only the Hebrew word signifying the chief characteristic of the tree to guide them. Hence, there are naturally differences of opinion amongst the learned, but the balance of authority confirms what is above stated.

Let us take an instance of the difficulty there is in clearly identifying a tree or shrub. It has been conjectured that the crown of thorns our Saviour wore was plaited from the branches or twigs of the Rhamnus. But as the Evangelist makes use of that Greek word which denotes thorns generally, and there exist so many species of thorny plants in Palestine all conjectures on this subject must remain uncertain, though some profess to see in the very word a foundation for their belief. Much might be said concerning the present condition of the Holy Land, owing to its trees being made the prey of everyone requiring firewood, or the material for a house, or even a handle to a tool. In any case, a tree has been felled, and still is, when opportunity serves. The Jews are so much devoted to the cultivation of the vine that all other arboricultural subjects were sacrificed to it; and the best thing the well-wishers to Palestine could do at the present day would be to endeavor to promote the science of forestry there by furnishing a supply of seeds and saplings, and above all providing for their being properly looked after when planted. The barren land and dry watercourses, of what was once a fertile country, coupled with a scarcity of trees, proves how much this sterility is due to the neglect of man. At present, however, we cannot hope that anything will be done, for the Turkish rulers of the country are not in a position now to entertain any proposition on the subject, even though it cost them nothing; and, besides, the Turks do not seem to appreciate the desirability of a constant and good income from the export of wood, or long before now they would have utilized the productions of their own European provinces, from which sources a regular supply ought long ago to have been sent to the British and other markets of Western Europe.

A GOOD STORY.

Old father Bernacki, or Bernachie, as he calls himself, walks around his fellows like Nestor among the Apulians. He is still ready to fight his old insurance enemy, "ze Alcohol." He thinks after a man has reached sixty years of age he should mend his weary ways. The doctor will appreciate the following story:

Judge William Carter, of Sheboygan, Mich., and Judge Caswell Marks, of Selma, Ala., were both natives of Lexington, Ky. In boyhood they had jammed the same cat's head into the same milk pitcher, stolen peaches from the same tree, got trounced by the same farmers, and were otherwise enviously intimate friends, afterward chums at college, and then errand boys in the same office. Later in life they parted, and rose to sublime honors in their separate places. Last January they met for the first time since their parting in Lexington, and brewed a convivial bowl in honor of the event. About midnight, full of affection and enthusiasm, they retired in the same bed. It was a huge affair, standing in the middle of the room, and capable of being drawn up by ropes to the ceiling while the room was being cleaned. It was a very cold night, and they placed their clothing upon the foot of the bed. Just after they fell asleep four friends entered softly, drew the bed by the ropes nearly to the ceiling, and left them thus suspended about ten feet from the floor. Then they locked the door outside and retired. At 3 A. M. Judge Carter awoke with that species of thirst which usually comes after Kentucky punch and technically known as "hot coppers." It contained a little more alcohol than Austic's rule allows.

Leaping lightly out of bed to get the ice pitcher, he went whirling down ten feet, alighting with a soul-stirring thump on all fours.

There was a long and painful pause. Then he peered upward through the darkness and called:

"Caswell!"

[No reply.]

"O, Caswell!"

[Feeble cries.]

"Caz!"

"Eh?—um?—what?" The Judge was awakening.

"I've fallen through a trap," yelled the now affrighted Judge, "Get up and light a candle."

"Where are you?" queried Judge Carter, sleepily, framing his opinion that his honorable brother was drunk.

"Down here. Fell through a trap. Don't get out on my side of the bed."

"All right." And Judge Marks, springing out of his own side, turned three somersaults and landed on the small of his back. Both were now convinced they had fallen into a den of thieves, and were possibly to be murdered. The jokers had closed the heavy wooden shutters so no light could enter and removed all the furniture. The judges groped around on hands and knees, nearly frozen to death, and only at daybreak discovered the bed, climbed into it, and got warm enough to talk the thing over.

There were recently two temperance societies started under glorious auspices. The headquarters of one is at Selma; the other at Sheboygan.

Little boy (to his sister, who has just come into the room with a beautiful apple in her hand)—Come, Sis, let us play at Adam and Eve. Sister—How can we? Little Boy—Just see if you can tempt me to eat that apple?

Daisy—"When I get big like you, ma, I'm going to marry a doctor or a minister." Mamma—"Why, my dear?" Daisy—"'Cause if I marry a doctor I can get well for nothing; if I marry a minister I can get good for nothing."

"Doctor, do you think that the cigarette habit really affects the brain?" Doctor—"That is a question that will probably never be answered." "Oh, doctor, why?" "Well, a man of brains has never been discovered smoking one."

"Ma," said a discouraged little Maple avenue urchin, "I ain't going to school any more." "Why, dear?" tenderly inquired his mother. "'Cause taint any use. I can never learn to spell. The teacher keeps changing words on me all the time."

Mabel. "Did you come in an electric?"

Edith. "Yes; and I did n't enjoy it one bit. There was hardly anybody in the car, and it is so annoying, you know, to sit down without making some man give up his seat."

AT THE SODA FOUNTAIN.

WHAT NEW YORKERS DRINK DURING THE HOT WEATHER.

"It is remarkable how a man gets to know just what the people want," said a soda water boy in a large uptown drug store. "When you see a woman come in, it is ten to one that she wants a vanilla ice cream soda. You never saw a woman yet that took soda without ice cream. Men have not got time for that sort of thing. If they want ice cream they are not going to dawdle over about three cents' worth covered with foam—not by a good deal. They will go to a restaurant.

"But women are different. They like to fiddle and fuss the spoon around after the last bit of the cream and look at themselves in the glass over the fountain at the same time. You know when women are shopping they often have to get a soda so as to kind of have a mirror and get fixed up.

"The school girls always call for chocolate with ice cream—invariably. The small boys are just like the girls. Now, a business man wants something to quench his thirst and that he can get down quickly, consequently he takes an orange or lemon phosphate or else a mineral water—usually vichy.

"The old men drink mostly calisaya. It is a kind of a tonic—made from a bark and contains about a grain of quinine and twenty per cent of alcohol. Consequently it is a sort of a bracer. Ministers, too, usually drink that, and once in a while they wink at me when they call for it. Cocoa wine, too, is popular with the old folks.

"Whenever I see a man or woman that looks like hayseeds come in, I always get ready to give them a sarsaparilla cream. They kind of fight shy of the other thing. They want something, and run their eyes down the list. They light on sarsaparilla cream; that seems familiar and safe, and they call for it. It used to be thought that sarsaparilla possessed great medicinal powers, but that idea has been exploded. The hayseeds think they are still getting a medicine and a quenched thirst all for ten cents, and it tickles them."

The talkative soda water dispenser ceased his harangue for a moment to mix three chocolate sodas for a trio of young girls who had just entered. There was a sputter and a phiz as he pitched a bromo seltzer on the counter to a dyspeptic-looking man with one hand and dealt out four checks with the other. Then, walking goose-fashion, three Chinese entered and lined up in front of the fountain.

The soda water boy leaned his hand on a spigot and then gazed with a far away look in his eyes at the ceiling, and asked:

"What'llyehave?"

Two of the Celestials stared blankly at the polished fountain, while the other gazed for a moment at them, and then murmured:

"Thlee stlawbelly."

"Ice?" interrogated the soda boy briskly.

"Lice," murmured John, and a moment later the three Celestials were fondly fingering the chop stick-like spoons and casting the pupils of their almond eyes in behind their noses. A look of perfect bliss overspread their yellow faces. The last drop was down and the interpreter seized the check, thrust his hands deep into the pocket of his blouse and drew out the coin. Then all three filed out.

"Awful fond of soda, these Chinese. They are among the best customers we have," said the boy. "Chinese always take ice cream, and usually strawberry.

"It is noticeable that in the morning we sell most of the mineral and medicinal waters. In the afternoon, always the thick, rich stuff.

"Of all we sell here in twenty-four hours, I should say that 20 per cent is orange phosphate, 15 per cent lemon phosphate, 10 per cent mineral waters, vanilla soda 13 per cent, chocolate 10 per cent, strawberry 8 per cent, lemon soda 7 per cent. The rest is made up of such drinks as pistachio cream, raspberry, apricot, nectar and so forth."

ITALIAN INNS.

Italian life is, even in small villages, all out-of-doors. The kitchen of an Italian inn, no matter of what degree, has always a warm hearth and its larder is more plentifully stored than a public house in England of the same description. The only faults—some may think it is a long and a rather complete list—are noise, dirt and universal disorder and confusion.

They never know what rooms they have; they bawl out to each other, the landlord to the landlady and the latter to the waiter, "Try No. 57 or 46!" till they at last find you a bed-chamber.

In the morning there is knocking at your next-door neighbors, or by mistake at your own door, to ask whether it be not you who are to be off by the early coach at 6; or maybe it is the waiter, officiously waking you up to inform you that "it is only 4 and you have still two hours for your slumber."

You always seem to catch them at the wrong moment, always find them unprepared, as if theirs were anything but an open house, and a traveller the most unlooked-for thing in the world. Their cordial greeting and friendly bustle help you to overlook the discomfort that every traveller is sure to experience, and the abundance of the table is on the plane with the inn-keeper's appetite; he is ever ready "to eat and let eat."

DIOVIBURNIA UTERINE, TONIC, ANTISPASMODIC AND ANODYNE.

A reliable and trustworthy remedy for the relief of Dysmenorrhœa, Amenorrhœa, Menorrhagia, Leucorrhœa, Subinvolution, Threatened Abortion, Vomiting in Pregnancy and Chlorosis; directing its action to the uterine system as a general tonic and antispasmodic it is unexcelled.

FORMULA.—Every ounce represents 3-4 dram each of the fluid extracts: Viburnum Prunifolium, Viburnum Opulus, Dioscorea Villosa Aletris Farinosa, Helonias Dioica, Mitchella Repens, Caulophyllum Thalictroides, Scutellaria Lateriflora.

St. Louis, Mo., June 23, 1888.

I have used DIOVIBURNIA enough to satisfy myself of its merits. It is of unquestionable benefit in painful dysmenorrhœa; it possesses antispasmodic properties which seem to be exerted especially on the uterus.

Dr H. Tuholske

Professor of Surgery, Post-Graduate School.

St. Louis, Mo., June 18, 1888.

have given DIOVIBURNIA a fair trial, and found it useful as an uterine tonic and antispasmodic, relieving the pains of dysmenorrhœa and a regulator of the entire uterine functions. I feel authorized to give this recomendation.

L Ch Boisliniere

Professor of Obstetrics, St. Louis Medical College.

St. Louis, Mo., June 18, 1888.

For more than a year I have prescribed DIOVIBURNIA. In those cases that I have been able to follow up, found that they derived much benefit from its use in almost every form of dysmenorrhœa—especially the conjestive form. I am so pleased with it that I now prescribe it almost daily.

T. L. Papin M D

Physician in Chief and Gynecologist to St. John's Hospital.

St. Louis, Mo., June 20, 1888.

I very cheerfully give my testimony to the virtues of a combination of vegetable remedies prepared by a well known and able pharmacist of this city and known as DIOVIBURNIA. I have employed this medicine in cases of dysmenorrhœa, suppression of the catamenia, and in excessive leucorrhœa, and have been much pleased with it. I do not think its claims (as set forth in the circular accompanying it) to be at all excessive.

Professor of Principles and Practice of Medicine St. Louis Medical College.

DOSE.—For adults, a dessertspoonful three times a day, after meals. In urgent cases, where there is much pain, dose may be given every hour or two, *always in hot water*. Put up in Eight Ounce Bottles.

To any Physician, unacquainted with the medicinal effect of Dioviburnia and Neurosine, we will mail pamphlets containing full information, suggestions, commendations of some of the most prominent professors in medicine and various methods of treatment. Or to those desiring to try Dioviburnia and Neurosine, and will pay express charges, we will send on application a trial bottle of each.

DIOS CHEMICAL COMPANY, St. Louis, Mo.

THE MOST IMPORTANT SUMMER MEDICINE.

The repugnance to "losing" time, characteristic of Americans, is in few, if any, things better illustrated than in the practice, common even among those who really know better, if they would only stop to think, of resorting to violent remedies for the immediate checking of abnormal intestinal activity, an annoyance more common at this season than at any other. "I haven't time to be bothered with my bowels," protests the impatient business man, as he sharply calls them to order by a dose of brandy and burnt flour, or something else of equally vicious effectiveness. And the last state of that man is likely to be worse than the first. The reaction he so energetically compels is exceedingly apt to cause painful and dangerous constipation and may, indeed, result in inflammation of the bowels. If he would only reflect a little on the causes of his ailment, the physical conditions of which it is a symptom, he would restore himself to health in an easy and rational way by means of Ayer's Pills, which are the most perfect regulators of the digestive organs that medical science has yet discovered.

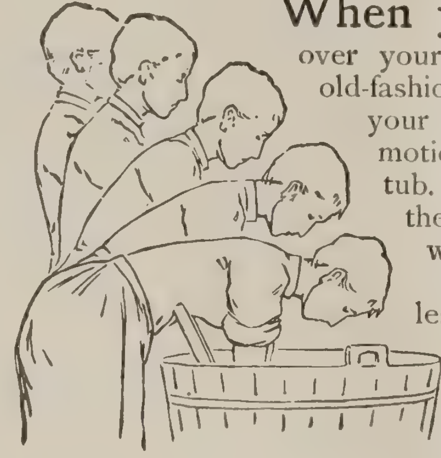
Whether constipation or looseness may be the trouble they will be found equally effective, for the simple and sufficient reason that they restore, promote and maintain normally healthful conditions in the organs. When the excretory functions are sluggishly performed, the primary cause, in almost all cases, is torpidity of the liver, which has ceased casting off its secretion of bile, the principal service of that fluid being the promotion of excretory action in the bowels. Ayer's Pills contain podophyllin (mandrake) and other potent vegetable ingredients, which correct that inactivity certainly and promptly, doing so, too, without causing the painful griping and other disagreeable sensations common to most drastic purgatives and without any of the dangers attendant upon the use of mercury. While they have a distinctly purgative effect, it is gentle and may properly be considered as secondary to their cathartic service, which sets in motion the natural forces for stimulating the bowels to action.

In all cases of unnatural laxity of the bowels, from simple diarrhœa to the most violent flux, it is safe to assume that the inciting cause of the disturbance is the pressure in the bowels of some substance which has caused inflammation in their delicate lining, or by congestion from cold. Unripe fruit, or that in which decay has started fermentation, or any food difficult of digestion, may set the bowels in revolt and put all their forces at work for expulsion of the offending matter. Arrest their endeavor abruptly, and evil consequences inevitably ensue; but aid it by means of Ayer's Pills, and you work in harmony with nature.

They stimulate the liver in the way already indicated, and also the kidneys, which are always more or less sympathetically affected when there is a liver derangement; they aid the bile in expelling the irritating matter from the bowels, and soothe and heal those inflamed mucous surfaces as no other medicine can. That these pills are really most valuable helps to nature, by reason of their benign potency in aiding her process, is fully demonstrated by their wide range of serviceability.

They are exceedingly beneficial when taken as "after-dinner" pills, and are very efficacious in the treatment of even the severest forms of intestinal derangement. In numberless instances their use, for a time, has effectually cured chronic constipation, torpid liver and some grave affections of the kidneys.

Not only should a box of Ayer's Pills be kept ready at hand in every household, but as a prudential measure, they should be made an indispensable part of the outfit of every traveler and of all persons going to the country for the summer, particularly if there is no certainty of obtaining prompt medical treatment.



When you're Rubbing over your washboard, in that painful, old-fashioned way, these are some of your positions. Just try these motions, up and down, without the tub. That will prove how hard they are. Then try **Pearline's** way of washing.

That will prove how needless and absurd they are. Without the washboard and the rubbing on it, and without bending over the wash-tub or bobbing up and down over it—you save the wear to your clothes and the work for your back. That's **Pearline's** way. Directions on every package.

Send it Back Peddlers and some unscrupulous grocers will tell you "this is as good as" or "the same as Pearline." IT'S FALSE—Pearline is never peddled, and if your grocer sends you something in place of Pearline, be honest—*send it back.* 390 JAMES PYLE, New York.

◆

LEARN A TRADE.

We might define education as being the possession of knowledge that may be practically applied. In order that an individual may acquire a proper education, a good foundation is necessary and can best be laid in early childhood by arousing curiosity or interest and directing it toward discovering the cause of effects in practical life. The idea of doing for mere sport is encouraged to too great an extent among children. Children should have their sport and recreation, but the mind should be so directed that sport should have an upward and advancing tendency. The amount of schooling and time devoted exclusively to it for a proper fitting for ordinary vocations of life, varies according to the native talent of the pupil. In connection with book learning, there is one thing in which Americans should pattern after some of the European nations, and that is that every one should learn a trade, girls as well as boys. There are many of the trades open to girls. I care not what one may choose for permanent business, a thorough knowledge of some trade is beneficial even if not followed longer than simply to learn it. It gives a better insight into business; it develops more fully the mental powers, and in case of financial reverses and necessity for manual labor the individual finds himself equipped for the struggle. If a tiller of the soil, the knowledge of a trade will come into practical use almost daily. In conclusion let me say that without excellence there can be no success, no income. Nothing worthy of mention without labor and effort, calling forth our best energies, our best talent. Let not the question be, how may I get a living without work, but how may I honorably reach the grandest success possible for me to obtain.

◆

We were sitting in the parlor of a famous Tammany social club.

"I could n't see anything funny in the story that fellow just told," I said to my friend, an ambitious young office-seeker.

"Nor I," he sadly replied.

"Then what made you laugh so over it?"

"Don't you know who that fellow is?"

"No. Who is he!"

"Why, that's the district leader!"

An object which weighs one thousand pounds at the sea level would weigh two pounds less on a mountain four miles high. But the landlord would charge as much and probably more for it.

Wonder if bicycles are eligible to the order of Sons of the Revolution.

◆

BEWARE OF OINTMENTS FOR CATARRH THAT CONTAIN MERCURY

as mercury will surely destroy the sense of smell and completely derange the whole system when entering it through the mucous surfaces. Such articles should never be used except on prescriptions from reputable physicians, as the damage they will do is ten fold to the good you can possibly derive from them. Hall's Catarrh Cure manufactured by F. J. Cheney & Co., Toledo, O., contains no mercury, and is taken internally, acting directly upon the blood and mucous surfaces of the system. In buying Hall's Catarrh Cure be sure you get the genuine. It is taken internally, and made in Toledo, Ohio, by F. J. Cheney & Co. Testimonials free.

☞ Sold by Druggists, price 75c. per bottle.

INTERESTING TO THE BLIND.

"It always makes us happy to be able to render any service to our many good friends among the blind. We have known some fine spirits of men and women who never saw the light, and we have found that they may live lives of usefulness, may engage in profitable industries, may cultivate their minds in a generous way, and may greatly enjoy life in this world. We have a notion that the blind are told far too often of what they lose through the deprivation of sight, and that their minds are apt to be depressed by being forever reminded of it; it is painful for them to know that others are perpetually whining on their account, or trying to cheer them in ways that are repulsive to their self-respect. Many of them are full of gayety or full of thought; many are able to draw abundant satisfaction from the resources of intellect or emotion with which the Almighty has endowed them. Let us aid our blind friends after a hearty fashion in the vocations they may pursue; let us have good fun in their company; let us enjoy discourse with them upon philosophy and fraternity. A blind person of either sex may furnish the best companionship one can find.

We herewith render the service asked of us by a blind friend, in commending not only to the 50,000 blind people in the United States, but also to others who may be induced to take an interest in it, *Kneass' Magazine for the Blind*, published semi-monthly, in Philadelphia, at 219 Church street, terms $3.50 a year. The publisher is a blind man, and his magazine is in its 28th year. If you have a blind friend, send it to him or her; otherwise, if you are favorably disposed, take it for your own perusal, as there is no difficulty in reading with the eyes the raised characters in which it is printed for the fingers of the blind. You will even find pleasure, if you have the spare time, in learning to read it with the fingers, which is no very difficult task. We notice that a blind reader of the magazine, in referring to its typography, says that 'The letters seem to rise in response to the touch with a preciseness and a sympathetic distinctness that is refreshing,' and really it is very interesting for a learner to find out how quickly he will gain knowledge of the characters by the touch.

The number of the magazine before us contains much good reading. We commend the magazine, and also the fund which is needed for its permanent support."

ANOTHER AWARD FOR WALTER BAKER & CO.

The Johnson-Locke Mercantile Company, of San Francisco, the largest commission house on the Pacific cost, have telegraphed Walter Baker & Co. as follows: "You have just been awarded special prize at Midwinter Fair, which exceeds in value and consideration gold medal, and is highest award Exposition gives. Congratulations."

Walter Baker & Co. are the largest manufacturers of pure, high-grade cocoas and chocolates on this continent.

SELF-DESTRUCTION NOT ALWAYS SUICIDE.

The lexicographic definition of suicide is perverted when applied by the judiciary to cases of self-destruction, such as the mistaking poison for the prescribed medicine, and judgment is founded upon such theory. Suicide, continues the *Life Insurance Journal*, must be a willful act, whether from a lucid or maniacal impulse, but an unsought and unwelcome death cannot be laden with the ignominy of premeditation. When death is the result of a mere error in beverages—where poison is drunk as a curative medicine and not as a death potion—it is to be regarded as so purely an accident that the validity of an accident policy under such painful circumstances should be acknowledged.

Apropos of the above, we extract the result of a case recently tried in Edinburgh, where a widow sued an accident company to recover £125 insured upon the life of her husband, who had died from taking carbolic acid, while suffering from cerebral softening. The judge expressed great sympathy for the plaintiff but gave judgment for the defendant.

"Suicide" said his lordship, "in its primary sense, means merely self-killing, which may, of course, be fortuitous or intentional. The word is almost invariably employed to express self-murder, and it is in this sense in which it is used in the policies in question, and in the policies of life insurance generally. I have considered this case very anxiously, not only because of its general importance but also because, although the sum at stake is not considerable, it is a matter of a serious moment for the pursuer, and I cannot help thinking that she was ill-advised in rejecting an offer made to her on the part of the defenders."

* * *

What with the sand in the berries and the marble dust in the sugar, if the man who indulges in strawberries and cream does not want the earth, he gets it.

Little Johnny.—"Pa, what does 'supererogation' mean?"

Pa. "It means—for example, it is a supererogation to say a policeman is an Irishman."

* * *

It is wonderful, when you come to think of it, how well our long-lived ancestors got along, wholly unconscious of the fact that the murderous microbe, the baleful bacillus and the juggling germ were in perennial conspiracy against his health and happiness, and hurrying him onward to a premature death.

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BEST QUALITY IS GOOD ECONOMY.

THE STANDARD OF EXCELLENCE FOR OVER FIFTY YEARS.

First Assistant Postmaster General, Frank H. Jones, sent the following matter to all postmasters, with orders to post the card containing it in their offices and call the attention of their patrons to it, that their mail could be returned.

"Don't mail your letter or valuable package without having your own address written or printed upon the left hand corner.

This will ensure its return to you if not delivered, and will prevent its being sent to and opened at the Dead Letter Office, Washington.

THE U. S. OFFICIAL POSTAL GUIDE warns us that over 5,000,000 pieces of mail matter go to the Dead Letter Office annuall , containing many thousands of dollars; part can be returned to the senders and part cannot. If all letter writers would stick their *Printed Address* on their envelopes the Dead Letter Office at Washington could be abolished."

The above statement of the Post Office Department proves the great value of Gummed Addresses to every man, woman and youth who write letters. Think of it! Over 5,000,000 "dead letters" sent to the "Dead Letter Office" annually containing tens of thousands of dollars, etc., simply because the writers' addresses do not appear on the envelopes. This is a matter too important to be overlooked.

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LITERARY NOTES.

With the July number, *Household News* starts gaily forth on its career of usefulness for its second year. There is abundance of good material in this number to suit all tastes, each of the departments presenting an unusually attractive menu. Especially do we find in Mrs. Rorer's corner much to commend and recommend. A timely article on Hot Weather Dishes fits in delightfully with the weather that has been meted out to us the past few weeks. It fairly bristles with points of information regarding the care of the house and household; how to cook a variety of palatable dishes just suited to the weather, and how properly to eat them; how to keep vegetables and meats fresh and wholesome; how to make cooling drinks and how to prevent the cook from losing her temper. Beside this, the regular monthly Bills of Fare and Answers to Inquirers are worthy of close attention.

Dr. Miller concludes his valuable series of articles on the Care of Children, and Dr. Seltzer comes to the front with a chapter on Diabetes, and a dietary of permissible and forbidden foods and drinks.

The literary features of the Magazine are increasing in importance from the Kindergarten stepping-stones to the critical Reviews. In this latter department Professor Hay is wielding a trenchant lance. His views on current literature bear the imprint of honesty. We admire the self-reliance that enables him to give full expression to his opinions, whether or not they are favorable or unfavorable to author or publisher. His criticisms are grounded on a deep and abiding knowledge of the whole field of literature.

Altogether *Household News* is making rapid strides to the front. Its colored illustration, also, deserves mention. Sample copies are mailed for the asking. Published in Philadelphia by the *Household News* Co., Limited.

◆

ANNOUNCEMENT.

There are many scientific periodicals. The New Science Review differs from all of them. It is new in every sense—new in its appearance, new in its methods, new in its aims. It does not attempt to supersede the older and more conservative periodicals, but to supplement them. Those address themselves to the specialist, this to the public at large. While yielding to none in the scientific value of its material, it strives to present it in a popular style. It does not assume that the reader already has an esoteric acquaintance with the matter in hand and starts from that standpoint—it supplies him with a standpoint—it explains before it demonstrates. Thus it occupies a position midway between the ponderous scientific journals and the lighter magazines. It is as valuable as the first, as interesting as the latter. But it conflicts with none. It has a distinct individuality.

The quarterly method of publication has been chosen because it has been thought that this affords ample time for the exploitation of every new theory, invention or discovery that may hold the public attention during the interim. When the New Science Quarterly speaks, it will speak with authority. It will have weighed the evidence impartially. Its decisions, if not infallible, will be in accordance with the latest development of modern thought.

All communications should be addressed to J. M. Stoddart, New Science Review, 147 N, Tenth Street, Philadelphia, Pa.

◆

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OLEO ONCE MORE.

The hue and cry about oleomargarine seems to have subsided, probably because other and seemingly more important matters have claimed the attention of the lawmakers. If Congress can find time between the passing of some tariff bill, which can be agreed upon, and the period when politicians need to go home to their respective constituents to repair fences for the fall election, they will no doubt attempt to pass some kind of law to gain favor with the farmers and as usual in such cases call it a law for the better protection of the public. Oh, this everlasting paternalism, this mask for all sorts of trickery. It always reminds us of the inscription on the old tombstone "I was well, I wanted to be better and here I lie." The motive of this man though mistaken was an honest one, but the motives of the wily politicians in Congress in passing any anti-oleo legislation will not be honest and the people know it. Even the farmer, whose vote such trickery is intended to catch, knows it. The workingman whom such laws are supposed to protect, knows too well that he has nothing good to hope for from such legislation. He simply asks to be let alone, he prefers to use his own good common sense and be allowed to buy a good wholesome butter substitute, at a moderate price, within his means, instead of being forced to buy grease butter at the exhorbitant price to which it will be forced, if legislation drives competition out of the market. Oleomargarine is the only competition the butter ring fears, for they know well that if the working man is left to himself he will prefer the cleanly, nice oleomargarine to inferior butter. If Congress forces him to accept their gracious paternalism, he knows that he will be exposed to the extortion of the butter ring. He is no fool, the farmer cannot be fooled into the belief that the crafty politician has done anything to merit his gratitude. The question therefore occurs to us why do not shrewd politicians see that as they cannot please any one but a few butter men by unfriendly legislation and will surely incur the enmity of both the workingmen and farmers, they had better leave well enough alone. If Congress does not keep its hands off they will soon wish they had for the poor man will not stand such unfriendly legislation to benefit one class at his expense, and he has a vote.

ADULTERATION AND ADULTERATION.

Tweedledee and Tweedledum would fairly describe the action of the National Confectioners' Association which has just held its annual session in Boston and has placed itself upon record as to what that wise and conscientious body considers to be adulteration. They had received an enquiry from one of the members in the following plain language, which we quote. This was referred to the Executive Committee composed of Messrs. Jenkins, Echert, Jewell and Holmwood and their report and a portion of the debate upon it we also append:

"BOSTON, July 11, 1894.

"*To the National Confectioners' Association, now in session in Boston:*

"We ask for information as to whether the use of paraffine or mineral wax in the manufacture of chocolates and candies is an adulteration, and if so to what extent is it harmful. Prosecutions have lately been commenced in Great Britain by the Board of Health against dealers who sell confectionery or chocolates containing this mineral wax. If the use of paraffine wax is not injurious and it is held that it is a harmless adulterant, or rather ingredient, in chocolates and candies, we would like the N. C. A. to put such a statement on record. Respectfully submitted,

J. C. McCOOK CO."

In regard to the foregoing, it is the sense of your committee that paraffine wax is not an adulterant in the manufacturing of chocolates. Hence we consider it harmless.

Mr. Jenkins read the communication received from the J. C. McCook Co., relative to the use of paraffine wax, and the action of the Executive Committee thereon, printed above.

Mr. Jenkins.—I move that the report of the Committee in that regard be adopted.

Mr. Sibley.—Upon hearing such a report as that, I am compelled again to look over the list of the Executive Committee to refresh my mind as to whom the members are. The statement has been made here that the taking into the stomach of paraffine wax—a mineral wax—is——

Mr. Jenkins.—I make a point of order—that the question is upon the adoption of the report of the Committee.

Another member suggested that as chewing gum was made entirely of paraffine wax and did not seem to kill those who used it, candy made of the same substance could not be harmful.

Another thought the matter should be referred to a chemist to find out if paraffine wax was a poison. This man evidently thought that a chemist, physiologist and physician were all one profession.

The matter was cut short by referring it to the new Executive Committee who will, in all probability, be just as astute as the old committee and report that paraffine, to their knowledge not having poisoned any one yet, can be safely declared not to be an adulterant. We do not know what the delectable candy is called, but when we find our children masticating a piece of insoluble candy followed by gastritis, we may know that they have purchased some of this paraffine candy (probably sugar-coated) and that it is not an adulterant, for the National Confectioners' Association has so declared it. It proves what their opinion is worth.

CIGARETTES.

Many of our readers have no doubt wondered what it was that made the cigarettes usually sold here have such a vile mephitic smell, so unlike tobacco or anything else but just sickening cigarettes. We think we have discovered the secret. In visiting a large machine shop lately we were shown an ingeniously constructed press which we were told was intended to press out flat and as thin as tobacco leaves, the stems of tobacco after they had been steamed. As these stems are nothing but wood we can easily reconcile the smell of burning or rather smouldering wood in the cigarettes which rowdyish young boys and impecunious young men try to smoke and poison the atmosphere with. Upon mentioning our discovery to a gentleman who has access to one of these cigarette factories he said he had seen tobacco stems in bundles and bales there, but could not imagine what they used them for, but thought it likely they were waste products to be sent out. He added a little to our stock of information by telling us of the purchase by one of the cigarette factories of beet tops which he said were dried, saturated with tobacco juice and also made up in cigarettes. These two items together would rationally account for the vile suffocating stench of these cigarettes and for the rapid increase of throat diseases among the smokers of cigarettes. Every specialist in throat and lung diseases states positively that the use of cigarettes in this country has rapidly and enormously increased the death rate among young men. What have our health boards and legislators done about it. We are aware that these cigarette factories are closely guarded against outside inspection, but official examination cannot be resisted. Why should not proper health officers examine these poison manufactories and at one sweep kill this source of danger to young men and annoyance to the community, the cigarette evil?

HOUSEHOLD.

TESTED RECEIPTS.

Every Receipt here given is original, has been practically tested by the AMERICAN ANALYST and is therefore, confidently recommended.

EGG PLANT—FRIED.

Peel and cut the plant in slices less than one-half inch thick. Immerse in salt and water over an hour; drain and dip each slice in beaten egg and bread crumbs, and fry brown.

BAKED CORN.

Cut the grains of one dozen ears of corn down the middle and scrape. Add one cup boiling milk, one half cup butter, salt and pepper to taste. Put in buttered baking dish, dot over small bits of butter, and bake in moderate oven three-quarters of an hour.

BROILED TOMATOES.

Cut large tomatoes in two, cross-wise; put on gridiron, cut surface down, when brown, turn and cook until done. Season with butter, salt and pepper.

SUCCOTASH.

Boil one quart of lima beans until tender. Cut down the middle six ears of corn and scrape. Drain water from beans, add the corn, season with salt, pepper and a good lump of butter. Add a little milk. Cook twenty minutes after adding the corn.

CORN OYSTERS.

Eight ears sweet corn, grated; two cups milk, three eggs well beaten, salt and pepper, phur enough to make a batter. Put a teaspoonful butter into a frying pan and drop the mixture into the hot butter, a spoonful at a time; turn on both sides. Serve hot for breakfast, or a side dish for dinner.

PEACH COTTAGE PUDDING.

Stir sliced peaches into a batter made of one-half cup sugar, three tablespoonfuls melted butter, one beaten egg, one cup milk, one pint flour, two teaspoonfuls baking powder. Bake in a loaf. Serve with sauce.

WHORTLEBERRY PUDDING.

Beat thoroughly one-half cup butter with one and one-half of sugar, add one cup of sweet milk, two eggs, three cups flour, two teaspoonfuls baking powder. Stir in one pint of berries, steam two hours. To be eaten hot with sauce.

APPLE PUDDING.

Fill a buttered baking dish with sliced apples and pour over the top a batter made of a tablespoonful butter, one-half cup sugar, one egg, one half cup sweet milk, one cup flour in which has been sifted one teaspoonful baking powder. Bake in moderate oven until brown. Serve with liquid sauce.

PLAIN SAUCE.

One-half cup butter, one and one-half cups of sugar rubbed to a cream. Add two well beaten eggs, and just before serving add enough boiling water to make a thick cream.

HYGIENIC.

WHISKEY VS. BEER.

After many years' careful study of the subject in all its bearings, writes Dr. Frank H. Wade, of Pittsburg, Pa., to a daily paper, I am firmly convinced that, for reasons which I shall give, whiskey is the least injurious and, therefore, the safest and best of all the alcoholic liquors for men to use. I am perfectly well aware that many high medical authorities are of the opinion that drinks containing the smallest percentage of alcohol, such as beer and wine, are, for that reason, the least injurious. Doubtless this would be true of an equal quantity of those mild fluids as compared with an equal quantity of distilled liquors, but a man who drinks beer will take a great number of glasses of it in the course of a day—in some instances as many as twenty-five or thirty, or even more. The whiskey drinker, on the contrary, will not take more than three or four of his favorite tipple in a day. As a consequence, the beer drinker takes a great deal more alcohol into his stomach and has much larger quantities of it constantly in his blood and tissues than the whiskey drinker. The more constantly alcohol is present in the system the more quickly does it ruin the nervous system, the liver, kidneys, bladder, blood vessels and heart. The man who drinks two or three quarts of beer or wine a day, but is never "under the influence of liquor" in his whole life, is much more certain to feel the evil influence of alcohol upon his system than he who does not touch liquor for two or three months, and then gets upon "a whiskey drunk" which lasts for several days or a week. Occasional excess in anything injurious is not so detrimental as constant indulgence.

Then, again, by the excessive quantity of fluid which the heavy beer or wine drinker takes he imposes a much severer task upon his kidneys and bladder than does the drinker of distilled liquors. It is a statement frequently made that it is not the moderate use of alcohol which does harm, but the abuse of it. This is as foolish an error as it is an unfortunate one. In these United States thousands of people are annually made victims of the very worst forms of organic disease simply by the moderate but habitual use of alcoholic drinks, such as beer and light wines, containing only a very small percentage of alcohol, and they are people who have never known the slightest sensation of drunkenness in their whole life and never will.

At the present time the evils inseparable from any form of alcoholic stimulation are greatly aggravated by the impossibility of obtaining any form of alcoholic drink which is not adulterated with the most poisonous and deleterious drugs. Several years ago there was organized in New York a society for the promotion of moderate drinking. It regarded itself as a temperance society, though not a toal abstinence one. Its members were pledged to drink moderately. Recognizing the evils arising from the adulteration of liquors so universally practiced, the society was desirous of finding some brands of pure beer which it could advise its members to drink to the exclusion of every other. Accordingly a committee appointed for that purpose procured samples of the most celebrated varieties of beer direct from every principal brewery in this country, and a competent analytical chemist was employed to analyze them and detect what impurities, if any, they contained. The result of this investigation showed that there is not a drop of perfectly pure beer brewed in this country. Instead of containing only malt, water and hops, every specimen of beer examined was found to be adulterated with resin, aloes—a powerful purgative, which irritates the rectum and tends to produce hemorrhoids; picrotoxin—a peculiar bitter principle derived from the seeds of coculus indicus, and a poison so deadly that five grains of it are sufficient to kill the largest and strongest of dogs—and many other drugs of an equally deleterious and dangerous character. Equally general and equally dangerous adulterations are made in every form of alcoholic beverages of which we have any knowledge.

Alcoholic liquor of any kind, even at its best and purest, cannot fail to be injurious to any one in health. It destroys the brightest intellect—it degrades the purest women. It corrupts the judicial ermine, it undermines the very foundations of government. It is the devil's best friend and instrument.

THE HYGIENIC ADVANTAGES OF NEW BREAD.

New bread and the hot morning roll have been condemned as injurious and difficult of digestion. However true this charge may be the use of new bread appears, even from the hygienic point of view, to have some compensating advantages. Dr. Troitzki, writing in the Russian medical periodical *Vratch*, states that he has found that new and uncut bread contains no micro-organisms, as the heat necessary to bake the bread is sufficient to kill them all. As soon, however, as the bread is cut and is allowed to lie about uncovered not only harmless but pathogenic microbes find in it an excellent nutrient medium. White or wheat-meal bread is a better medium than black or rye bread, as the latter contains a greater percentage of acidity. Dr. Troitzki's experiments with the pathogenic bacteria, says the *British Medical Journal*, gave the following results: Streptococcus pyogenes aureus retains its vitality on the crumb of wheat-meal bread for twenty-three days; the bacillus of anthrax (without spores) remains alive on the crumb for thirty to thirty-seven days, and the crust for thirty-one to thirty-three days; the typhoid bacillus remains active twenty-five to thirty days on the crumb, and twenty-six to twenty-eight on the crust; whilst the bacillus of cholera lives twenty-seven days on both. Of special interest is the fact that if the bread is placed before the experiment for fifteen minutes in the disinfecting oven (at a temperature of 115 degrees C.) all the above named pathogenic bacteria retain their vitality for several (four to eight) days longer. The author explains this fact by the acidity of the bread being lessened by the heat and the bread becoming a better nutrient medium.

MICROBES ON POST-CARDS.

The latest scare in microbes has been started by Professor Uffelman, of Rostock, who infected a letter with cholera bacilli and put it in a post-bag. When the letter was taken out 23½ hours later, the bacilli were still alive. Bacilli were also found living on post-cards twenty hours after infection. The micro-organisms were found to die rapidly when placed upon coins. A fly charged with cholera bacilli was afterwards placed on some beef. A little later the meat was found to be swarming with bacteria. A finger was infected with cholera bacilli and dried. One hour later the finger was rubbed on some roast meat, and numerous bacilli developed subsequently. The moral of all these experiments is obvious.—*Medical Record.*

MEDICAL.

HEADACHE, DYSPEPSIA AND HEART DISEASE.

By Prof. Dr. Schwenninger, Munich.

Pain is said to be a blessing, inasmuch as it is nature's warning that something is wrong and needs rectification. This premise is, doubtless, true to a certain extent, but it is not always easy to determine just what is wrong or just how it is to be corrected. There are numerous theories, some of which conflict seriously, but most of which undoubtedly have foundations of truth. For instance, one high authority asserts that the immediate cause of all pain is the condition of the blood acting upon the nerves, and that it must be either poor in quality, too abundant, or thick and impure. Poverty of the blood he said would cure by the introduction of iron into the system, the extra quantity he would lessen by vigorous exercise and by moderation in eating, while thickness and impurity, which he regards as synonymous, would be remedied by activity in pure air out of doors, the operation of the lungs doing the work without the agency of drugs or medicines. The writer agrees with this position, on general principles, though, of course there must be conditions in which this formula will prove insufficient.

The most common pain, and the one which gives most perplexity, not only to the sufferer, but often to the physician as well, is familiarly known as headache, but this, after all, is a very indefinite term, since there are a multitude of afflictions totally different in their nature which produce pain in the head. One cause of the dull pain which is often experienced about the eyes, or back of them, is the result of an undue strain of those useful organs. This may be the result of excessive use, or of some defect of the eyes of which the victim may be wholly unaware. The remedy for this difficulty is simple, and has no alternative save that of disuse of the visual organs, which is not always convenient. A skilled oculist will have no trouble in fitting the eyes with glasses which will correct the trouble, and certainly no false pride nor personal prejudice should stand in the way of the simple remedy. The writer sympathizes with those who "do not like to wear glasses," but it is certainly better to do that than to suffer continuously and run the risk of irreparable mischief.

A catarrhal headache is often considered synonymous with a "cold in the head," but while the beginning of serious catarrhal effection may be a cold affecting the nasal passages, this is quite a different thing from the chronic stage of the complaint, which is oftentimes stubborn, resisting even medical treatment, and is sometimes dangerous in its results. In this case, as in others, the cause must be removed, and the existence of the dull pain is simply the warning that such trouble exists and is holding possession. A malarial headache is likely to be felt in almost any portion of the head, and it is frequently difficult for the patient to decide whether or not this may be the cause. Usually malarial aches are present in different portions or the body at the same time, and frequently shift from place to place without any apparent cause. Symptoms of this kind will usually enable the sufferer to decide that he is the victim of malaria independent of diagnosis of the physician.

A disordered stomach, or impaired digestion, is another frequent cause. This may be, or may not be, accompanied by biliousness, but the condition of the tongue is a safe guide. Where the tongue is coated, in connection with headache the stomach needs attention, and if the coating have a yellowish tinge, impaired biliary action is unmistakably indicated. A thorough cathartic should be promptly employed; but it may not be amiss, in this connection, mildly to protest against the violent and unreasonable doses with which people sometimes afflict themselves, or the mistaken notion that the more powerful the remedy, the more radical the cure. As a general thing, if the system is in tolerable condition, a moderate degree of assistance given to nature will insure the restoration of healthful action. Where the disorder of the stomach has reached a point causing nausea—sick headache—an emetic, where it can be taken by the patient without causing excessive suffering, will give much more ready relief. For most persons a generous draught of hot water will produce the desired result, more especially if a little mustard be added.

Too little or too much blood in the system, and especially too much or too little sent to the brain, will induce headache. These causes can generally be located quite definitely by the sufferer himself. In the case of too little blood—anæmia—the faculties seem to act sluggishly—it is hard work to think, the person is not confident of his mental conclusions, there seems to be a dulness in a portion of the brain, while the top of the head will usually be found abnormally heated, and the accompanying dull pain seems to be located somewhere in that vicinity. There is no throbbing; there seems on the contrary, to be a vacuum. The victim of this trouble suffers from sleeplessness; he is anxious and troubled regarding his business affairs; is irritable, inclined to anticipate misfortune and disaster; is easily discouraged, and frequently applies to stimulants for relief. Nothing could be worse. The supply of blood is already insufficient for the demand made upon it, stimulants simply force the weakened system to exertion for which it is wholly incompetent, and the natural result is very liable to come in insanity, or an utter breaking down of the nervous, mental or physical system. The remedy is not reached by pushing the system further, but by comparative rest; by the use of nutritious food, exercise, and avoidance of care and worry. Whenever medical treatment is necessary, I cannot too earnestly urge the employment of the careful family physician.

Hyperæmia is the reverse of the condition just described, the brain suffering from the presence of too much blood. In this case the pain is in the forehead, the head aches to bursting, the eyes are very sensitive to the light, the sleep is restless and disturbed by wild dreams. In this case the head throbs, the pulse is full and strong, there is a sense of heat and pressure in the neck, face and head. A person, whose system is overloaded with blood tires easily, the breath is short, and there is danger of fatal injury resulting from the pressure upon the blood-vessels of the brain.

Nervous headche is, perhaps, the most difficult of all to describe or to treat, inasmuch as it is not a disease but a symptom, the cause of which may be in some remote part of the system. One form of nervous headache, which is unmistakable, though not always understood as such, consists of a dull grinding pain at the back of the head near the base of the brain, where the nerves of the spinal cord enlarge and ramify for the formation of the brain. Pain in this locality, frequently extending down the neck, is a sure indication of impaired nervous action, and should be treated accordingly. In another direction, nervous trouble produces a violent headache—that is from the medium of the stomach. With many people any deep or sudden emotion, such as grief, fear or even joy, may partially or entirely paralyze the action of the stomach; there is an utter absence of appetite, and the serious headache which results is simply the indication of the trouble. When it is removed, and the stomach resumes its accustomed action, the headache will disappear.

There are other and numerous causes of pain in the head, such as the breathing of impure air, excessive heat or cold, gas poisoning; a defective tooth, and similar causes may find their expression, but most of the more serious and general causes have been outlined above. In every case, as will be seen, a proper understanding of the nature of the pain which is suffered will indicate the course of treatment which should be pursued.

Pains in other portions of the system, and especially those of children, are often removed by placing over the seat of the trouble a woollen cloth, wrnug from water, as hot as it can be borne, to be changed or replaced as often as the temperature lowers. In the same direction, we have the universal mustard plaster, and the feet in hot water, the purpose, in all cases, being to draw the surplus of blood from the seat of pain. An application which is very efficient for the removal of severe pain consists of equal parts of sweet oil, chloroform and liquid ammonia, shaken together. A cloth saturated with this liniment should be applied, and a handkerchief, or something of the kind, pressed over it with the hand. It should be removed as soon as the pain ceases.

Mention has been made of the use of iron in certain conditions of the blood, but it is well to bear in mind that this is not an agent to be promiscuously and ignorantly employed. In the first place, iron is not a panacea for all sorts of ills and disordered conditions; in the next place, it should not be administered without full knowledge that it is needed. The method of administering is quite as important. There are many people who try to take iron but who experience serious ill effects therefrom; to use their own words, it does not agree with them. In this condition one or two things may be taken for granted; either the system does not require iron, or that the wrong preparation has been employed. There are numerous forms in which iron is administered, and it requires the skill of an experienced physician to decide which is best adapted to the individual. Another trouble with self-treatment is that in most cases much too large doses are taken; small doses only can be readily absorbed by the system, and any attempt to force nature in this direction brings disagreeable consequences. Generally speaking, therefore, no person should begin a course of treatment with any preparation of iron, except under direction of a physician. It does not by any means follow that because one feels languid and weak, iron is the proper remedy; it may prove quite the reverse, and distinctly harmful.

Dyspepsia is one of the most annoying of modern diseases, as it is also widely prevalent; in fact, it exists oftentimes when the sufferer is unaware of its presence. Dyspepsia affects most of the vital organs in the system directly or indirectly, but special consideration should be given to its liability to be mistaken for heart disease. It is entirely safe to affirm that there are thousands on thousands of people who mistakenly imagine that they have heart disease, and are able to describe the symptoms upon which their belief is based. There is a pain or an unpleasant sensation in the cardiac regions, palpitation of the heart, accompanied by heat and nervousness, irregular breathing and the like. These are, of course, partially due to deranged action of the heart, but that is a symptom, and not the disease which is making the mischief. The trouble, almost universally, is due to impaired digestion, derangement of the action of the liver, and nervous affection, which induces the sympathetic action of the heart. It is, consequently, erroneous and even dangerous under these conditions to resort to any manner of treatment for heart disease, since that useful organ will resume its regular action as soon as the true cause is removed or modified.

This is largely a paper of caution and it may not be amiss in closing to repeat this general exhortation: Never to administer at haphazard, drugs which effect the action of the heart, until competent and careful examination has shown that organ to need treatment. In that case, the matter is serious enough to require some more responsible authority for the use of any kind of mendicant than mere supposition that this or that, of which practically nothing is known, might be the right thing for the sufferer. Human life ought to be too precious to experiment with in that way.

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THERAPEUTIC EFFECTS OF ALTITUDE.

Dr. de la Harpe divides altitudes into three principal zones: (1) The sub-Alpine zone, between 700 and 1,300 metres; (2) the Alpine zone, up to 1,900 metres; and (3) the hyper-Alpine zone, above that height. The first of these is considered most suitable for invalids suffering from cardiac affections, atheromatous changes, those advanced in years, and excitable subjects, while a higher altitude gives excellent results in tuberculous, anæmic, and neurasthenic cases. With regard to the properties of the mountain air, the chief factors of the climate mentioned are: (1) The lowering of the temperature, at the rate of 1° for every 170 metres in the Alps; (2) the energy of insolation; (3) the dryness, and (4) the purity of the air; (5) diminished atmospheric pressure. Those unaccustomed to the climate of these altitudes must become acclimatized; the process takes some days, perhaps a week, during which the appetite increases, thirst is intense, respiration more frequent, the number of cardiac pulsations augmented, and the blood-pressure diminished. The quantity of air inspired increases, as also the amount of carbonic acid expired. Insomnia is at times very troublesome. Frequent palpitations and dyspnœa occur, especially in cardiac, anæmic, and fatty subjects. Once acclimatization is complete the sleep becomes natural, palpitations cease, respiration and pulse fall to normal, but the quantity of inspired air is slightly increased, while the blood is found to contain more corpuscles. This dimished atmospheric pressure exerts an influence on the circulation, accelerating it and raising the blood-pressure and tension of the pulse; the blood-vessels are fuller and nutrition is improved, thus affording excellent conditions for the treatment of anæmia and feeble cardiac innervation. The action of the dry and pure (free from microbes) air makes itself especially felt in certain pathological conditions; for example, the pus of suppurating, tuberculous, or pleural cavities undergoes diminution, the favorable process of sclerosis of the tissues surrounding the cavities is accelerated, and the cold of high altitudes rendered more supportable.—*British Medical Journal.*

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A cornet player who cannot attend a band meeting should send a sub-to-toot.

ADULTERATION.

BOGUS ORANGE CIDER.

In our issue of last week under the heading "Utilize the Surplus" we made reference to the enormous quantities of Imitation Orange Cider and Orange Wine fraudulently sold to innocent purchasers throughout the North and West.

Since then our attention has been called to a displayed advertisement of a leading retail grocery establishment in a Northern city which reads as follows:

"The Original World's Fair Florida Orange Cider."

"Orange Cider was the most popular drink at the World's Fair."

Since its close there has been a strong popular demand for it.

It is said to be pure juice of the fruit. It is strictly non-alcoholic. It is guaranteed to keep in any temperature. It is free from all essential oils or acids. It is healthful, stimulating and the pleasantest drink you ever tasted.

If you want to buy some we will sell it to you for 18 cents per quart bottle, or 65 cents per gallon. At the World's Fair you paid 35 cents for the same size."

Now we venture to assert that there is not one drop of genuine Florida orange juice in a dozen bottles of this so-called Orange Cider. In the name of the orange growers of this State we protest against its sale and call upon the owners of Florida orange groves to supply the demand for the genuine and healthful beverage which may so readily be made from the oranges which go to waste in the groves or are shipped solely for the benefit of transportation companies and commission merchants.

Our correspondent procured a bottle of this so-called Orange Cider, advertised at 18 cents per bottle or 60 cents per gallon, and writes us that it appears to be a weak solution of molasses and vinegar in water with a little dash of soap suds for flavoring.

The press not only in this State but all over the country should call attention to this fraud and denounce it in the strongest possible language, and orange growers should take measures to furnish a supply of pure Orange Cider for which there is already a large demand.

As near as we have been able to estimate the amount of this imitation sold within the past twelve months it would have required fully one-half the entire orange crop to make the same quantity of the genuine article.

Continuing our investigation in reference to the frauds perpetrated on innocent purchasers by the sale of fictitious or so-called Orange Cider and Orange Wine, we learn that the manufacture of imitation Orange Wine was first engaged in to a limited extent by parties in New York, and on a more extensive scale by a concern in Dayton, Ohio, about ten years ago, who for several years sold it to druggists and others in very considerable quantities without the fraud being suspected. The price to wholesale dealers was seventy-five cents to eighty-five cents per gallon in barrels, and the price to retailers from $1.00 to $1.25 per gallon according to the quality purchased. This imitation was a fairly decent beverage and as not one person in a thousand had ever tasted Orange Wine it was readily palmed off on unsuspecting dealers and consumers as a genuine wine made from Florida oranges. Sales appear to have been made very readily and the concern did a flourishing business. After a lapse of two or three years or perhaps a longer period there was some change in the make-up of this firm and one of the former partners, or a person representing himself as such, did a thriving business traveling over the country and selling the recipe from which this so-called wine is made. Here it is and the writer paid ten dollars for it:

Water, 8 gallons.
Granulated Sugar, 8 lbs.
Tartaric acid, 8 oz.
Oil of Orange, 1 oz.
Salicylic Acid, 8 grs.

The working formula was as follows: "Dissolve the oil of orange in a half pint of alcohol and incorporate this thoroughly with the sugar, then dissolve the sugar and tartaric acid in the water; at the expiration of twenty-four hours dissolve the salicylic acid and add it to the mixture. If the wine is required for immediate use the salicylic acid may be omitted."

Now we ask Florida orange growers if they are willing to risk their fair fame by permitting the sale of this mixture as Florida Wine without protest?

At the ordinary price of the ingredients used for the above mixture the eight gallons of so-called wine will cost eighty cents or ten cents per gallon. We have not been able to secure the formula from which the now Celebrated Orange Cider is made, but from comparing it with a sample of the so-called Orange Wine made from the above receipt we think the average cost may be about four cents per gallon. The Chicago manufacturer quotes it in barrels and half barrels at forty cents per gallon and in ten and fifteen gallon kegs at from forty-three to forty-five cents per gallon, and this being without charge for the containers will leave the price of the so-called cider something less than forty cents per gallon. The price list states "A liberal allowance to the jobbing trade," so we suppose after allowing the discount to the trade and paying the cost of the containers the Chicago manufacturer expects to realize about twenty cents per gallon net for the product of his factory. The price list for quart bottles is $2.50 per dozen, subject to the same liberal discount to the trade and including the cost of bottles, cases and all other expenses of packing and shipping.

Does any reasonable person for a moment suppose genuine Orange Cider can be furnished to the trade at any such absurd price? Unfortunately neither dealers nor consumers stop to think as to the possibility of supplying genuine goods on the terms mentioned and so the public is swindled and genuine Orange Wine and Orange Cider condemned forever.

As evidence of the demand for Orange Cider we quote as follows from the Chicago circular: "Did you visit the World's Fair? If so, you doubtless sampled our celebrated Florida Orange Cider. It is pronounced by thousands who drank it to be the finest beverage ever furnished to the public and prices unequaled. As the season is now at hand when cool and refreshing drinks are called for, we are receiving orders from the wholesale trade from all sections of the country. Our Florida Orange Cider fills the bill and is sure to give satisfaction in all cases."

If Florida orange growers will take steps to supply the demand for Orange Wine and Orange Cider, and by means of the newspaper press of the country thoroughly ventilate the frauds now practiced in this line, there can be no possible over-production during the next fifty years, and every box of Florida Oranges, including culls and drops, may be sold at the average rate of $2.00 per box on the trees. We do not know any work the different organizations of orange growers could undertake with more benefit than that of thoroughly warning the public against these frauds and taking steps to supply the demand for Orange Wine and Orange Cider, which at the present time will require about three million boxes anually and may be increased to indefinite proportions. The columns of *Florida Facts* are always open to the interests of Florida. Will not our brother editors aid in exposing this fraud which threatens to ruin what we conceive to be the most promising industry of the state?—*Florida Facts.*

DISGUSTING SAUSAGE REVELATIONS.

At the Lamberth police court, on July 12th, James Burt, a pork butcher, of 152 Wyndham-road, Camberwell, was summoned by Mr. Julius Jones, one of the sanitary inspectors in the service of the Lambeth Vestry, for exposing for sale a quantity of pieces of meat which were unsound and unfit for food.—There was a second summons against the defendant for having on his premises for the purpose of preparation for sale a quantity of meat which was unsound.—The inspector stated that on the 7th instant he visited the defendant's premises, and on the counter in the shop found 10 lbs. of meat which was stinking. On the same afternoon he again went to the defendant's premises, and upon going into the sausage house found a quantity of meat, a quantity of sausages on the bench, and some sausage meat, in all about two cwt. The whole was stinking and quite unfit for food.—Mr. Biron: Is this the case in which you found some coloring matter used in the manufacture of sausages?—Witness: Yes, sir, some red powder.—Mr. Biron fined the defendant £5 on the first summons, or one month's imprisonment, and £20, or three months, on the second summons.—George Hill, a pork butcher, of 7 St. Mark's-road, Kennington, was convicted on two summonses for having on his premises, for the purpose of preparation for sale, meat which was unsound and unfit for food.—Mr. Biron ordered the defendant to pay fines amounting to £15.—George Bauerlein, a pork butcher, of 100 Lambeth-walk, was convicted for a similar offence, and also for having on his premises eight loaves and nine pieces of bread which were unsound.—Mr Biron fined the defendant £5 on the first summons, and 40s. on the second.

At the same court Henry W. Haile, of 211 Wandsworth-road, was summoned by Mr. Julius Jones, one of the sanitary inspectors in the employ of the Lamberth Vestry, for exposing for sale a quantity of eggs which were unsound. The inspector stated that on the 31st ult. he found eggs being sold at the defendant's premises at the rate of 36 for a shilling. He purchased nine for threepence, and upon examining them found five to be bad. He returned to the shop and seized 71 eggs. He opened each one separately, and found 62 bad.—Mr. Moore, solicitor, who defended, said the defendant purchased a quantity of Austrian eggs, and was under the impression that they were good and sound.—Mr. Biron fined the defendant 40s. and 2s. costs.

COFFEE WITHOUT ANY COFFEE.

Mr. Ward, inspector for North Wilts, succeeded in discovering and bringing before the attention of the Swindon magistrates, on the 19th, what we suppose must be one of the most curious samples of coffee ever purchased. It was bought from a Mr. E. Jones, a grocer of Milton House, New Swindon, and the public analyst, Mr. J. W. Gatehouse, said, "I am of opinion that the said sample contained 95 per cent of added chicory. It was very difficult to detect any coffee whatever in the sample. Much of it contained no trace of coffee." A tin of the substance was produced and the label read: "Best French coffee, prepared expressly by the London Joint Stock Coffee Company (prepared in England), as used on the Continent, and wherever coffee is largely consumed. The fine flavour of this delicious coffee is produced by a special process of roasting, and is retained with a judicious admixture of the proportion of a patent prepared Hambro chicory at a certain stage of its manufacture." It was sold at the rate of 1s. per lb. For the defence it was stated that the public taste demanded this mixture of coffee and chicory, as did also the nature of the Swindon water, which was very hard. Our own opinion is that the water would have a very hard task indeed to extract any coffee from this substance. The magistrates were apparently of the same opinion, as they imposed a fine of 10s. and £1 12s. costs. Perhaps some of our readers can inform us who the London Joint Coffee Company are?—*Sanitation and Food.*

DANGEROUS TINNED FOODS.

At Liverpool, on July 18th, Kertland Mole was fined 20s. and costs for selling a bottle of haricot beans which contained compounds of copper equivalent to upwards of 2½ grains of crystallized sulphate of copper in each tin.

INVENTIONS, SCIENCE, ETC.

CARE OF SPECTACLES.

1st. Keep your lenses clear with old, clean soft linen or cotton. A few drops of aqua ammonia to a cup of water is excellent for cleansing; but this should not be used on cemented bifocal lenses.

Steel frames will retain their polish longer if occasionally rubbed with a woolen cloth, dampened with sewing machine oil. At the first signs of rust rub first with kerosene and follow with the oil. Oil them daily, and dry them often when wet with perspiration.

2d. Whenever spectacles are taken from the face, lay them on their edge, not on their face; by doing so, they are less liable to be scratched.

Tight joints prevent play of temple-pieces and help to make the frame more rigid. Therefore, do not usually shut or fold the spectacles, because the joints will in time become worn and loose thereby. A frame shut half a dozen times daily, in the course of a year is shut over two thousand times. The best of frames would soon wear out with such practice. If tightening the screws does not prevent their looseness, an optician can often remedy it by a minute washer or other means.

3d. In removing riding bow-spectacles from the head, use both hands, grasping the temples near the glass, and running the fingers along the wires toward the ears, lift both sides at once. Do not pull them off, because you alter the length of riding bow-temples thereby, and cause the frame to drop too low on the nose. Do not use one hand, because unequal pressure is brought to bear on one of the temples, and your frames will soon set too near one eye and too far from the other. This can sometimes be remedied by gently bending the end piece on the near side in, with small plyers, so as to throw the lens out.

4th. To ascertain whether spectacle frames are horizontally true: place them face downward, on any straight ruled line, so that the bridge joints rest exactly on the line. If horizontally true, the joints at each end of the spectacles will also rest on the line, and the temples will cross at the center or slightly below. Very careful bending will enable you to make them true, if the four joints are not on the same line. If one ear is higher than the other, then the temples on that side should be bent up slightly to lower the glass; and the opposite temple perhaps bent downward to raise the other side; thus making the frame set horizontally true.

5th. The temples should just touch the sides of the head in order to steady the frames. If they leave a mark they are too tight and need bending out. To correct this, hold the frames with the left hand, and draw the thumb and fingers of the right hand along the temples, the thumb placed within and the fingers without, pressing the thumb gently out. Or with small plyers, applied at the end of the frame where the temples join, carefully bend the end piece out. If the temples are too far from the side of the head, reverse the above process. Skeleton glasses or rimless frames should not be bent, except by an optician, or by an oculist, because they are easily broken. When steel frames are rusty, use great care in bending.

6th. The temples should not begin to curve until they reach the top of the ears. The curve should then be sharp and conform to the curvature of the ear, fitting exactly the depression behind the ear. If the temples by pressure irritate the skin back of the ear, slightly elongate the temples, or bend the curve behind the ear at the point of irritation, so that it will not press so tightly. When the bridge irritates the nose, lengthen the temples. To elongate riding-bow temples, hold the frame with the left hand, and draw the thumb and fingers of the right hand (thumb placed above and fingers below), along the temple, pressing gently down with the thumb and turning the fingers away from the frame.

When the frames drop too low, the temsel need shortening or the bridge sometimes needs to be bent outward. To shorten the temples, reverse the method for lengthening, placing the fingers above and the thumb below and gently press up with the thumb while turning the fingers towards the frame.

SPECIAL CARE OF EYE-GLASSES.

1st. Eye-glasses should be kept in a long case without folding. If folded, the spring becomes twisted and the lenses scratched.

2d. Each and every time they are placed on the nose, care ought to be exercised to put them horizontally true and parallel to the eyes. If not worn exactly horizontal nerve-strain and muscular strain follow, and the visual benefits are lessened.

3d. In placing eye-glasses in position, use both hands.

4th. Do not allow other persons to try on your glasses, as they may alter the adjustment for your nose.

5th. When eye-glasses are too tight or set too high on the nose, spread the spring slightly. When they set too low, or the frame is too loose, the spring should be tightened. If the lenses "lop, or turn up," loosen the screws at the outer ends and turn the lenses until they sit horizontal.

6th. With Fox or other offset guards, bending the guards in at the top with plyers will make them hold better. If the lens tips up, bending the guard in at the bottom lowers the lens. If the lens tips down, bending the guard in at the bottom raises the lens. Bending the entire guard away from the frame throws the lens out; bending it in, throws the lens in.

Skeleton eye-glasses need great care to prevent breakages.

THE CHOICE OF FRAMES.

The choice of frames is of considerable importance from a medical point of view. The success of the physician's efforts depends upon the accurate adjustment of the axis of the lenses.

Frequently the patient returns to the physician within a few weeks saying: "My glasses no longer afford the relief they did at first," and it is the rule in such cases to find frames bent, so as not to be exactly horizontal. The correction of this fault at once affords comfort.

1st. Riding bow-temples stay on better than straight bows. They should be made of heavy material.

2d. A stout steel frame that keeps its position because it is rigid and of proper temper is a much wiser choice than frail gold ones. If frames are too light, they are continually getting out of position, and break easily. If they shake with each movement of the head, they will cause dancing images of objects that tire the retina and exhaust the brain. Heavy temple-pieces retain their position simply by their shape and weight, and will last for years under proper care.

3d. The bridge whether of steel or gold needs to be quite strong, firm and heavy. The arms of the bridge ought to be just as strong as that part that rests on the nose. Its width should not be at the expense of the thickness; saddle bridges are usually preferable because they hug the nose more firmly and deeply and afford greater firmness to the position of the frame. The bridge ought to fit the natural depression existing at the angle between the forehead and nose. If properly inclined and the frames have temples not too taut, it will not hurt the nose.

4th. The best gold frames are 14k fine, and of extra heavy weight. When made of round wire they are inconspicuous. Such heavy frames will prove economical because less liable to bend or break; they will keep longer in a horizontal position and will also afford greater comfort than frail or less heavy gold frames.

4h. Skeleton or rimless spectacles are less noticeable than frames with rims. For constant wearing by careful patients, these are not very objectionable; yet great care should be exercised while cleaning the lenses or handling the frame to avoid exerting pressure or leverage near the screw holes; as these places are weak points, at which skeleton glasses are especially liable to be broken.

6th. Eye glass frames are made in so many different forms that most any kind of a nose can be fitted to some one of them. If the longitudinal axis of the frames can not be kept in a horizontal position, they are decidedly objectionable for astigmatic or prismatic lenses. The improved bar spring with some form of the Fox or Champion clip seems to meet most of the objections raised against eye glass frames.

USE FOR MARBLE CHIPS.

As a striking instance of the modern ingenuity that gathers up everything that nothing be lost, and turns it to some account, the transformation of marble fragments into things of beauty may be cited as conspicuous. Formerly tons of chippings of the finest marble were put to no better use than to make roads or marble dust. Now the little fragments are brought even from the far-famed quarries of Carrara—home of the Sicilian Anarchists—and are reunited in a solid mass to form household ornaments, parts of buildings, mantels, monuments, etc.

In a large brick structure in one of the small cities of America is the factory of the company engaged in the marble mosaic business. As one enters he sees barrels full of marble of all colors, the fragments being of various sizes, from that of a pea to that of an egg or larger. The smaller sizes are already reduced enough to form the mosaic, but the larger ones are crushed by powerful machines, then carefully screened so as to get an even grade of the size desired. The particles are then mixed with a composition of cement and other materials, and the mass is moulded while soft in the desired shapes. Lying about one sees various moulds for table tops, brackets, urns, mantels, cornices, paper weights, etc. When the mosaic has hardened it is smoothed and polished like solid marble, and takes a mirror-like finish.

The various colors of the marble are made to appear to great advantage by contrast in some articles. For instance, a checkerboard will be laid out in squares of red and black, alternating on a table top of gray marble. The makers claim that the composition will last for a long time out of doors, and it has been used already (more particularly in the West, where it was first introduced) for building fronts, cemetery vaults, tombstones, etc. It will be seen that the marble mosaic has a great advantage in the way of cheapness over solid marble work. The material costs much less than solid marble in the block, while the work of moulding, admitting as it does of indefinite duplication, is a less expensive process than cutting by hand. While many may be sceptical about the durability of marble mosaic as an outdoor building material, there is a good demand for the small articles finished for indoor ornaments.

Most of the stone marbles used by boys are made in Germany. The refuse only of the marble and agate quarries is employed, and this is treated in such a way that there is practically no waste.

Men and boys are employed to break the refuse stone into small cubes, and with hammers they acquire a marvelous dexterity. The little cubes are then thrown into a mill consisting of a grooved bedstone and a revolving runner. Water is fed to the mill, and the runner is rapidly revolved, while the friction does the rest.

In half an hour the mill is stopped and a bushel or so of perfectly rounded marbles taken out. The whole process cost the merest trifle.

MISCELLANEOUS.

THE RELATION OF WOMAN TO DOMESTIC LIFE.

[By Marian A. White in the *National Popular Review*.]

One of our popular writers has declared that the strength of a nation, particularly a republican nation, lies in the intelligent and well-ordered homes of its people. Accepting this statement, then, we naturally conclude that the strength of the American nation lies immediately and particularly within woman's realm.

Woman either in the capacity of daughter, wife and mother, has ever shed luster upon hearth and home. There she is queen by her own right; there she governs, or should govern, with a firm yet loving consistency. There she plans for the comfort, health and well-being of those near and dear to her. Such homes have given to the world a Napoleon, a Washington, a Gladstone and others. So associated has the name of woman become with that of home, that much prejudice was felt to her going outside of the charmed circle to engage in other pursuits. This prejudice has, in a measure, died away, or has been somewhat overcome by the progressive age in which we live.

Much has been written and said about woman as the mistress of the household, but very little said and much less done for the advancement and education of those who play so important a part in household economics, namely, our servants. We prefer to use the good old-fashioned term "servant," for with it is associated the memory of the faithful *Mollies*, the trustworthy *Nannies*, the devoted *Gretchens* and the loyal *Bridgets* of other days.

With the fall of Colonial fashions we laid aside this good old fashioned term of "servant," forgetting that we are all servants in a sense, and that we are all born "to serve" either in a higher or a lower capacity. So in our proud freedom from a foreign yoke, like a vigorous, wayward child just cut loose from its mother's apron strings, we chose a word that we thought would savor more of our republican make-up, and dubbed our servants "helps." Then to show how gracious we could be as a free people, we termed them "domestic," not taking into consideration that beings of a lower order might also be recipients of the same title. So having become somewhat mixed and complicated in our endeavor to be all that we considered a free and republican people should be, and to evince a desire to break loose from all the traditions of royalty and aristocracy, we have now stigmatized the dear, respectable "servant" of old a "hired girl." By our own example we have instilled into certain classes of the community the notion that housework is a menial occupation; we have shown by the manner in which we have trained our daughters, that all pertaining to domestic life is something to be shunned, a something to be looked down upon by so-called cultured people.

To our shame be it said that the trouble we now experience in procuring competent, faithful assistance in our households arises to some extent from our lack of sympathy, our neglect of duty toward those who have made intelligent, able, reliable servants. Of what use is it for the mistress to plan and devise methods for the orderly, healthful management of the household while the kitchen and cellar are in possession of an ignorant autocrat, whose intelligence in the simplest matters sanitary is of the vaguest order, and whose untidiness is of the most conspicuous kind? What use is it to spread disinfectants galore around our bathroom, while our kitchen dishcloth is reeking with typhoid and diphtheritic germs, fostered there by ignorance and neglect? What does it avail if the mistress of the household knows all about the nutrition contained in certain kinds of food, if an inexperienced cook ruin it in the preparation?

When our cook has learned the scientific use of a thermometer, when she understands that water at *boiling point is cooking* whatever is placed in it, and that it does not require to bubble and splash all over the range in order to accomplish its work; when she learns to regulate the oven by a thermometer—the same as the bakers of Vienna and Paris, who make the best bread in the world—rather than by guess work; when she has imbibed a little knowledge of chemistry, sufficient to enable her to cook a potato or any other vegetable in a scientific manner, then shall we have the dining table supplied with food that is wholesome and easy of digestion, and our family will be more healthful, and the nation at large be less liable to the dyspeptic attacks for which we have become notorious.

When our housemaid has learned that in every speck of dust probably a disease germ lurks, she will not be so ready to flirt it hither and thither by means of a feather duster, but will resort to more effective measures for its removal and utter extermination.

Domestic service will never be sought after by the more intelligent portion of young womanhood, until we place it upon a basis with other labor organizations. Do we advocate an Union of Household Servants? Yes, decidedly. We advocate an organization wherein this class may meet for mutual improvement and social enjoyment. And we feel certain, they will, if given encouragement by our Club women, use tact and carry on the work of such an organization without the assistance of a crawling, sneaking so-called walking delegate.

Let there be institutions of instruction, in which girls and young women desiring to become household servants may be taught everything necessary to the comfort and health of a well-appointed home. We do not mean the kind of superficial instruction one obtains in the so-called "cooking-school," where the work dwindles simply into the promotion of a "fad," where the candidates learn to make up one or two dainty, yet expensive dishes to tickle the palate of an epicure, but let such an institution be formed upon a wise and economical basis, where household economics are thoroughly taught.

Young girls might be taken from already overburdened families, and given a training that shall fit them to become professionals in all duties pertaining to the household. From such an institution an intelligent young woman would be proud to graduate, bearing a diploma testifying to her efficiency in all matters domestic.

Surely here lies a broad field for woman's work and influence. It is strange that our many woman's clubs have never given this matter serious consideration. More good may be accomplished here in the matter of the home and the benefit of the nation, rather than in the questionable field of politics. But our ambition leads us to fly right over what lies within the province of true womanhood, and strain and worry and fret after that which belongs essentially to man. Oh, Womanhood, why do we not understand that we are responsible for that which lies immediately about us, in our own homes, rather than in the chimerical unknown field into which we are rushing with an energy that betokens physical and mental wreck not only to ourselves, but to those who shall come after us.

Let us enter the professions, if we will, if we are able, but let us never forget that we must always remain essentially womanly if we expect to carry influence into our occupation. The moment that we become masculine, either by word, look, or manner, so certain do we lose the opportunity of doing that good in the world for which we were created, and so surely do we lose the divine essence implied in those magic words: Mother, Home and Heaven.

QUEER RESTAURANT SIGNS.

If a stranger arriving at the Park square station, Boston, should betake himself to the restaurant across the square on the corner of Pleasant street, he would perhaps be surprised, if not astonished, as he gazed at the numerous placards painted in heavy, black letters, which almost completely cover the walls of the room.

Could it be possible that he was right in Boston, with the state house and Beacon street in sight, and Oliver Wendell Holmes, like our flag, "still in sight?" It seemed more like Chicago or Denver.

> The Proprietor is a Crank,
> Govern yourselves accordingly,

one of the signs reads.

If this is so that individual has certainly a rather humorous streak in his composition, or he would not have indited the following signs:—

"Do not examine the Bill of Fare for ten minutes and then order

BEANS."

Or this one:—

"No Napkins served with 5-cent orders.

☞SEE!☜

The young women who do the waiting on the tables are fairly good looking and modest in appearance, but old and young admirers are warned against flirting with them by the following impressive sign:—

> "Do not try to Mash the Waiters:
> They are ladies."

If appetite and good digestion wait on cheerfulness and laughter, these signs perhaps have a beneficial effect, even if they do seem a little crude for Boston, and that may be their design by the proprietor, who evidently has a long head, with no loose wheels or screws in it. Here is what he says of himself on another placard over the cashier's desk:—

> "The proprietor is blind, deaf and dumb,
> "Buys nothing, trys nothing,
> "Give away nothing."
> "KEEPS A DOG."

More of the signs read: "We do not cater to cranks and kickers."

"If you find fault don't patronize us."

"The waiters are human—none perfect."

"Do not expect Parker House fare at our prices."

"When you feel like kicking, just don't."

—*N. E. Grocer.*

NINE RULES FOR VISITORS.

BY REBECCA HART.

(*From the Housewife.*)

It is safe to assume that few of us have not been either visitors or visitee. I have been both. Let me lay before you a few thoughts that are the result of much cogitation and some talk on the subject. I am not prepared to say that the observance of these rules will make an agreeable guest of a disagreeable person, but I am prepared to say that utter disregard of them will make your hostess consult the papers to find the time of departing trains.

1. *Never give "pleasant surprises."*—Nobody likes to be taken unawares in the midst of possible house-cleaning, sickness, or even the weekly washing. Don't delude yourself into thinking that the pleasure of seeing you will compensate for the inconvenience caused by your want of thought. Unless you are exceptionally agreeable it will not do it. One of the chief pleasures of paying or receiving visits is in anticipation. There is nothing a hospitable housewife more thoroughly enjoys than putting the finishing touches to a guest's room and seeing that everything is swept and garnished ready for her welcome. The humdrum work of setting the table becomes a labor of love, and the children catch the infection and are ready to be seen at their best. Why spoil all this by dropping in unexpectedly, perhaps the very day before sweeping day?

Then, too, a hostess can plan for your comfort and her own convenience so much better if she knows you are coming. The cakes may be baked and the work arranged so that she can be with you; her friends can be notified of your coming, and little excursions and outings planned that you would doubtless miss in an unexpected visit. If you are a young girl, your "pleasant surprise" is not advisable, to say the least; if you are a housekeeper yourself it is inexcusable.

2. *State beforehand the length of your visit.*—Every hostess wants to make the most of the time devoted to her. She cannot do this unless she knows what the time will be and can plan accordingly. It would be a disappointment to her to have crowded all your entertainments into one week and then find that the visit was to be lengthened out to three.

Be sure to tell definitely the train by which you will travel, and, if your arrival is to be near the dinner or supper hour, whether you will have lunched. It is hardly right to leave your hostess in doubt as to the necessity of waiting a meal for you when you could save her this annoyance by a word.

3. *Adopt yourself to the habits of the family visited.*—It often happens that the habits of visitee and visitor are greatly at variance, as for instance, when the town visits the country, or *vice versa.* The town visitor may not be accustomed to rising till nine o'clock, but if the regular breakfast hour is seven, you are in courtesy bound to be ready for it. If you are so constituted that you cannot make such changes in your habits, *don't visit.* Being habitually late at breakfast is unpardonable rudeness in a guest. It is always well to inquire at night if a rising bell is rung and then time your movements accordingly. It is a well-meant but mistaken kindness on the part of many hostesses to let their guests sleep as long as possible—thus cutting short the dressing time—it is always best to know the time given between bells.

Not less annoying to a housekeeper than late rising is too early rising. To one accustomed to country hours, it is doubtless very trying to rise at six and wait till eight or half-past for breakfast, but the remedy is in your own hands. You may lie in bed till half-past seven. But, as you value your peace of mind and goodwill of your hostess, do not rise at six and descend to the family apartments. If one wishes to rise early and read or write before breakfast and it can be done without disturbing others, there is no objection to it; but never go down stairs until very near the breakfast hour. The living rooms must be swept and dusted, and it is not pleasant to have visitors about while this is being done.

4. *Avoid giving unnecessary trouble.*—A thoughtless guest is seldom a very agreeable one. It may be only thoughtlessness that prompts one to prolong calls long past the hostess's supper hour, thereby throwing her and the cook into a state of nervousness and expectancy sadly destructive of a spirit of hospitality—but it makes one a very uncomfortable visitor to have, nevertheless. Indeed, it is upon such little things that much of the comfort or discomfort of receiving visits depends. A lady once told me of a visit she had had from two young nieces. She had a large house with several unoccupied bedrooms. "They are very nice girls," she said, "but they give me untold trouble by going into other rooms and lying down on the beds for a little while and then leaving them in that condition. I never have any assurance that there is a bedroom in the house in order."

To many housekeepers it is a great annoyance to have their guest's things—bonnets, parasols, work, etc.—left lying at random. One naturally wants to have the house in order when she has company, and yet how often it is the case that it is more disorderly then than at any other time! The housekeeper doesn't like to do too much picking up for fear of seeming annoyed by it, and the visitor is really the proper one to take care of her own things. It is specially annoying to some persons to have their guests leave their purses and jewelry about. A lady is not always sure of her servants, and it is due to her to take care of these things yourself. Keep them in your trunk locked. Some hostesses specially request this.

Another thing to avoid is calling upon servants for extra services. If you have laundry work to be done, look up a laundress instead of asking the lady of the house to have it done for you, even though it specially may be but a trifling service. As a rule servants resent such things unless paid for them, and even then it interferes with the regular work. After a lengthy visit it is very proper to remember the servants with some little gift if you do not like to offer money.

5. *Be helpful in an unobtrusive way.*—Adapting yourself to the manner of living and habits of the family will settle many little points just here. If you are visiting where there are several servants it would be considered an indiscretion for you to offer to help, but if your friend does her own work or has only one servant, there are many little ways in which you can assist her. Of course you will take care of your own room, but if there is sufficient intimacy you may do more without giving offence. You may wipe the dishes, make up her bed and help in many ways that will suggest themselves to you, but you must do it in an unobtrusive way—and *don't* go into the kitchen while she is getting a meal.

6. *Don't affect to be entertained.*—A hostess is necessarily out of the room certain times of the day. Nothing makes her more uncomfortable after such an absence, than to find the guest waiting stiffly for her return without doing anything to entertain herself. It gives her a feeling if hurry and nervousness that is sometimes destructive of the pudding, to say nothing of the welcome. You can easily relieve her of this feeling by a little tact. You know that she will be busy for a while after breakfast. Take this time to go to your room to write letters, or take up the morning paper or a book, and when she returns let her see that you have been entertained during her absence. Have your fancy work or your crocheting, and she will feel better about leaving you.

When you know that she is specially busy take one of the children—the most troublesome one—for a walk, or make a call; in short, when you know that she must absent herself, forestall her by making some excuse to absent yourself.

7. *Pay your own small bills.*—It seems sometimes almost impossible to do this. Occasionally your hostess will insist so upon paying for you that it is almost rudeness to refuse. Allowing for such cases, it is still true that, as a rule, it is better to pay for your trunk yourself than to let your hostess do it. It is really a part of your travelling expenses. Be on hand when the trunk comes and pay the man. You will find this much easier than making your hostess take the money after she has paid it. Supply yourself with change, stamps, and stationary before leaving home.

8. *Don't fail to write on returning home, and express your pleasure in the visit.*

9. *Never retail family secrets learned from a lengthy visit.*—That every closet has its skeleton is truer, alas! than we sometimes think, A casual acquaintance seldom sees behind the door; a visitor sometimes has glimpses of what her friend would gladly keep to herself. It may be evidences of dissipation in the father or son, a tendency to sharp words from mother or child, pinching poverty, or respective make-shifts that the world knows nothing of—whatever it may be, if the secret is yours only by virtue of your entrance into the home life, it should be sacred. Your friend has taken you into her "holy of holies"—enter it not with irreverent feet, bring not from it a thoughtless tongue.

MICROBES IN IRONCLADS.

A chemist in the Navy has observed that the ironclads remained intact when in open sea, or in certain parts of ports. When in stagnant water they were attacked by a destructive agent, which manifested its action by the presence of small holes in the metal. This condition occurred more rapidly when the vessels were anchored near an outlet for sewage. Experiments proved that a sample of the iron immersed in sea water, taken from sea at a distance from the shore, remained intact; samples immersed in sea water taken near the coast, were attacked more or less quickly according to the distance that the water was from the shore; where polluted sea water was sterilized by heat, the metal was attacked by it very slowly, and this action, instead of increasing, was quickly arrested; the microbes and the spores being destroyed, fresh toxines were not produced. The action of those present being soon exhausted, the metal ceased to be attacked. These biological facts have evidently a close relation with sanitation.—*British Medical Journal.*

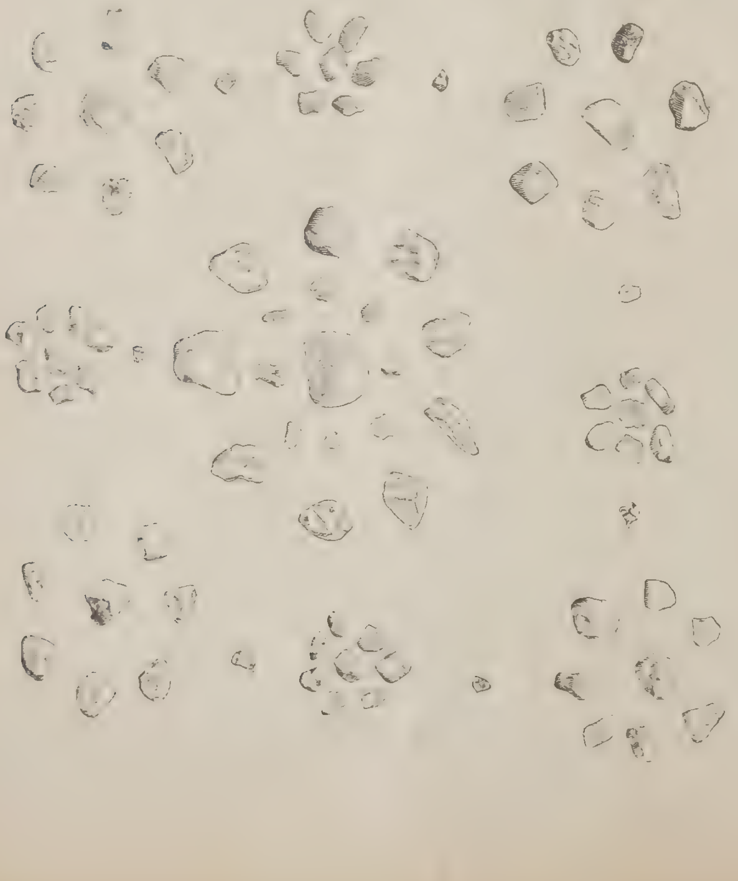
Sunday Morning: Wife. "Come, John, why don't you get up? Your breakfast was ready an hour ago, and it's spoiled by this time."

Husband. "Is it? Very well; then I don't want it. Call me in season for dinner."

BUFFALO LITHIA WATER

A POWERFUL SOLVENT OF STONE IN THE BLADDER.

The following plate is from a photograph and represents the exact size and shape of Calculi passed by the Hon. T. J. Jarrett, ex-Mayor of Petersburg, Va., under the action of Buffalo Lithia Water.



The original stone shown in the cut together with one from a similar case, will be on exhibition at Ditman's Pharmacy, Astor House, Corner Broadway and Barclay Street, New York, from where water may be obtained.

Statement of Dr. John Herbert Claiborne, M. A., M. D., of Petersburg, Va., ex-Presiden and Honorary Fellow Medical Society of Virginia.

PETERSBURG, VA., Sept. 5, 1892.

E. C. LAIRD, Buffalo Lithia Sprnigs, Va.

My Dear Doctor:—I send by this mail a box of CALCULI, passed at various times within the last year by Hon. T. J. Jarrett, our former mayor, whilst drinking the BUFFALO LITHIA WATER. They give him but little pain now when passing. I have never critically examined the broken CALCULI, passed in such quantities from Mr. Jarrett's bladder, but am under the impression that the most of them were MANESIAN PHOSPHATES. There were specimens, however, which presented the appearance of OXYLATES, and, I remember, impressed me specially as being URIC ACID. I do not pretend to account for the mode of their solution by the Buffalo Lithia Water. There is nothing in its analysis which would warrant such results, but THE RESULTS ARE THERE, and seeing is believing. I can only suppose that in Nature's alembic there has been some subtle solvent evolved, too subtle to be caught by our coarse agents, which makes this wonderful disintegration. "There are many things in heaven and earth not dreamt of in our philosophy," and his is a short creed who believes only what he can prove or explain. Faithfully yours, JOHN HERBERT CLAIBORNE.

It is well known that stone in the bladder, for the most part Gout, Rheumatic Gout Rheumatism, and also various forms of Dyspepsia and Nervous prostration have a common origin, viz.: excess of uric acid in the blood. It is evident, then, from the foregoing statement, that this water must possess extraordinary potency alike in all of these maladies. In Bright's Disease of the kidneys it is well-nigh specific.

Water in cases of one dozen half-gallon bottles, $5.00, f. o. b. here, and for sale by all first-class druggists.

Illustrated 32-page pamphlet, giving further information, sent prepaid on application to

THOMAS F. GOODE, Proprietor,
BUFFALO LITHIA SPRINGS, VA.

ALLIGATOR MEAT.

There is reason to believe that the flesh of a young boiled alligator is barely distinguishable from veal. It it probably cleaner and more tender than much of the meat of the animals that are usually consumed as food in Europe. In India the Sontals and other casteless natives greedily devour the flesh of an alligator without waiting to cook it. The flesh was very pale in color, and probably much superior to the flesh of snakes and rats and such like creatures which form the ordinary food of the predatory Sontal when hunting in his native woods. It does not fall to his lot very often to be able to circumvent and slay and eat a large alligator. He more frequently comes upon small alligators, and they go to swell the contents of his cooking pot. If however, he is so lucky as to meet a sahib who has shot a large alligator, say about six feet long, he eagerly falls upon the unwonted delicacy without waiting to cook it—very much as we read in books of African adventure, that the natives devour the carcasses, of the large game animals that the English sportsmen do not want for their own followers.—*Butchers' Advocate.*

◆

INTERESTING FRENCH EXPERIMENTS.

Some of the French doctors are reported as endeavoring to find a remedy for what has been termed electric sunstroke, an ailment described as arising not from heat so much as from light. This peculiar affection frequently befalls workmen employed in melting metals by means of the electric process—it appearing from observations made at steel and iron works that the intense voltaic arc between the carbon and the metal to be melted emits rays which, even at a distance of thirty feet, produce a painful, hot, pricking sensation, like that of a burn, on such uncovered portions of the body as the throat, face and, more especially, the forehead. The skin of the parts affected becomes either copper-colored or assumes a bronze hue; the eyes, in spite of black glasses, are so intensely dazzled as to be useless for some minutes, after which anthopsia, or yellow vision, sets in, everything appearing saffron-colored, the conjunctivia are inflamed, and there is a gritty feeling, as of sand under the eyelids; there is frequently great pain, also sleeplessness, and in some cases fever. The physicians declare that the surest and quickest cure they have yet been able to discover for this affection is perfect rest in a subdued light.

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Ancient Use of Sterilized Water.—A correspondent sends to the Dietetic and Hygienic Gazette the following interesting quotation from a recent book on Media, Babylon and Persia, by Ragozin: "As soon as Susa became the principal city and capital of the Persian Empire, its river, the Choaspes, had the honor of supplying the kings with the only drinking-water they would use. Kyros first instituted this custom, which was religiously kept up by his successors. 'Whenever the great king travels,' Herodotus reports, 'he is attended by a number of four-wheeled cars drawn by mules, in which the Choaspes water, ready boiled for use, and stored in flagons of silver, is moved with him from place to place.' It is amusing to find so early an instance of this hygienic precaution, the boiling of water, which we are wont to consider very modern."

◆

The English language is now spoken by 115,000,000 people. And there are times, when one has something particularly important to say, in which it does seem as though the whole 115,000,000 were speaking at once.

A HEAVY GERMAN PUN.

A chemical pun comes from Berlin. It relates to Count Wilhelm Douglas, one of the wealthiest and most popular members of the German nobility. The Count, though of Scotch descent, is quite Teutonized, and does not speak a word of English. His revenues are mainly derived from a large potash mine in the Hartz district, and on that account he is known in Berlin by the *sobriquet* of the "Caligraph" (kali=potash, graf=count).

◆

Kyanizing, a process of wood preservation, so named from its inventor, Kyan, consists in saturating wood with a solution of corrosive sublimate, either in open tanks or under pressure. The timber is prepared as follows: A tank made entirely of wood is used, and a solution prepared, consisting of corrosive sublimate and water in the proportion of 1 lb corrosive sublimate to ten gallons of water as a maximum strength, and 1lb. to fifteen gallons as a minimum, according to porosity, or absorption of the timber subjected to the process. The degree of absorption by oak and fir timber is said to be nearly the same; but other woods, such as beech, poplar, elm, &c., are more porous. The period required for saturating the timber depends on its thickness, about twenty-four hours being required for each inch in the thickness of boards. The timbers after saturation are placed in a shed to dry gradually. Timber not exceeding 3in. in thickness is ready for use in about fourteen days.

Bride (exchanging bridal costume for traveling suit). "Did I appear nervous at all during the ceremony, Clara?"

Bridesmaid (enviously). "A little at first, dear, but not after George had said 'yes.'"

NEUROSINE THE MOST POWERFUL NEUROTIC ATTAINABLE.

ANODYNE AND HYPNOTIC.

A reliable and trustworthy remedy for the relief of Hysteria, Epilepsy, Neurasthenia, Mania, Chorea, Uterine Congestion, Migraine, Neuralgia, All Convulsive and Reflex Neuroses. The remedy par excellence in Delirium and Restlessness of Fevers.

FORMULA: Each fluid-drachm represents 5 grains each, C. P. Bromides of Potassium, Sodium and Ammonium, 1-8 grain Bromide Zinc, 1-64 grain each of Extract Belladonna and Cannabis Indica, 4 grains Ext. Lupuli and 5 minims fluid Ext. Cascara Sagrada, with Aromatic Elixirs.

Richmond, Va., Sept. 29, 1891.

I prescribe NEUROSINE in the class of cases for which it is indicated, daily, and with satisfactory results. It completely relieves restlessness in Fevers.

Landon B. Edwards

Ed. Virginia Medical Monthly.

Memphis, Tenn., Feb. 6, 1892.

I obtained happy results from the use of NEUROSINE. It is certainly the best neuralgic medicine I have used. I have tried it in some cases of Trifacial Neuralgia, after having tried some of our most powerful remedies. None acted as well as NEUROSINE.

Editor Memphis Medical Monthly.

Memphis, Tenn., Jan. 7, 1891

I have obtained entire satisfaction from the use of NEUROSINE in cases of Neuralgia.

Dean Memphis Hospital Medical College.

Chattanooga, Tenn., Sept. 6, 1891.

Having used NEUROSINE in a number of cases I must say the preparation has given better results and more universal satisfaction than any other combination ever used by me. Have tried it in many nervous affections, in some it is a specific, in others a therapeutic agent of very great value.

W L Gahagan

Coroner of Hamilton County.

McKenzie, Tenn., Feb. 12, 1891.

NEUROSINE had such a happy effect in a case of Neuralgia or Congestive Headache, in which I tried it, often having failed on other things of similar nature. The case was one of long standing Sick Headache of peculiar character. The lady, three days after confinement, without any fever, took severe headache. NEUROSINE relieved her immediately.

R D Erwin

Fourche Arcuault, Mo., March 29, 1892.

I sent about two tablespoonfuls of NEUROSENE to an old lady, aged 84 years; she had been complaining for some weeks with Headache and Neuralgic pains all over her body more or less. She took that small amount and has been quite free from pain ever since, went to church in a farm wagon, 1½ miles, rough road, and is still free from pain and sleeps and eats better. I am well pleased with it.

U. H. JOHNSON, M. D.

DOSE: From one teaspoonful to a tablespoonful, in water, three or more times daily, as may be directed by the physician.

Supplied in Eight-Ounce Bottles.

To any Physician, unacquainted with the medicinal effect of Dioviburnia and Neurosine, we will mail pamphlets containing full information, suggestions, commendations of some of the most prominent professors in medicine and various methods of treatment. Or to those desiring to try Dioviburnia and Neurosine, and will pay express charges, we will send on application a trial bottle of each.

DIOS CHEMICAL COMPANY, St. Louis, Mo.

CAN THEY BE STRAINED OUT.

Every editor knows by experience that his correspondence, in the course of a month, will inevitably contain a definite percentage of repetitions of questions which he has answered, over and over again. The same subjects continually stir the curiosity, or command the interest, of new enquirers who, until their personal awakening, never even looked at the answers which did not then concern them. One of the most frequently recurrent queries addressed to this office has been "Is it possible to get a filter which will absolutely free water from the malefic germs of bacterial life?" Three persons from different states asked that, with slightly different phraseology of course, last week. To each and all we respond, as we often have before—temporarily, Yes; permanently, No. There are plenty of filters on the market which will clean water admirably for a few days, some good for a week, a few—perhaps—in which a qualified reliance may be placed for a month. But there inevitably comes a time when every filter, if let alone and used, becomes simply a huge culture ground for bacterial and adds infinitely more germs to the water passing out of it than it has strained from that entering it. Boil your water if you want it without bacterial. A temperature of 212° F. is the most reliable means for putting a stop to their pernicious activity. Unfortunately, boiled water, "straight" is impalatable to most persons. It seems "mawkish" and the process involves some trouble which, if entrusted to servants, is apt to be neglected. You may as well make your mind up to it, that bacterial are going to get into you somehow, whatever care you exercise, and your wisest course will be to keep yourself in such a condition of bodily health that they will not be able to do you harm. The human organism in which all the vital organs are duly discharging their respective functions, is proof against many ills, which successfully assail the one in which the natural powers are enfeebled or torpid. It is often seen that persons in vigorous health go on unscathed through epidemics of cholera and yellow fever and even live for years unharmed in districts ripe with malaria. No "special Providence" protects them. They simply have stomach, liver, kidneys, bowels and the co-ordinate apparatus of assimilation and nutrition in perfect order, supplying the system with an abundance of rich, pure, life-giving blood. Very few persons, comparatively, are endowed by nature with such superb physical condition and are able to maintain it through the natural influences of proper diet, exercise, pure air and freedom from care. But it is within the reach of all, to achieve it by such medicinal reinforcement of the natural powers, as will cleanse the blood, strengthen the organs which make it, tone up the digestive and assimilative forces and aid the work of excretion. These special services are rendered in highest degree by Ayer's Compound Extract of Sarsaparilla, a standard combination of the most efficient alterations and real tonics known to pharmaceutical science. Its composition is well known, including Honduras sarsaparilla, stillingia and yellow dock, consequently medical men do not hesitate to prescribe it and its value is known all over the world. A bottle of Ayer's Sarsaparilla, in any household, will be a better safeguard for health than any filter we know of.

They're going to Pieces both the women who wash, and the things that are washed, in the old-fashioned way. That constant **rub, rub, rub,** over the washboard does the business. Hard rubbing is hard work. Hard rubbing wears out the clothes; hard work wears out the women.

There's nothing of the kind, if you'll let **Pearline** do the washing. All you'll have to do, then, is to look after it.

It'll save all this work and rubbing that does so much harm. But, because **Pearline** makes washing easy, you needn't be afraid that it isn't safe. That idea is worn out. Just as your clothes will be, unless you use **Pearline.**

Beware Peddlers and some unscrupulous grocers will tell you "this is as good as" or "the same as Pearline." IT'S FALSE—Pearline is never peddled. if your grocer sends you an imitation, be honest—*send it back.*

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JAMES PYLE, New York

AMONG THE RHYMERS.

PRAYER.

' Man wants but little here below,"
But howe'er wants may taper,
Man's wants in prayer resemble close
The "want" page of a paper.

"Give us this day our daily bread"
Includes "the earth," in fine—
Stocks, bonds, blood horses, palaces,
Green turtle soup, cake, wine—

Would it not be a better plan
Our wants to 'sentials pare,
Than waste our breath, and rhetoric
In Epicurean prayer?

Why plead at open founts for "more,"
Far better is it not,
To pray for grateful consciousness
Of blessings we have got?

ELBRIDGE BRADSHAW *in Boston Transcript.*
Newtonville, Mass.

The day he was married his soul was thrilled
And his face wore a happy smile
As he noticed the very superior way
His bride swept up the aisle.

But now that they're settled his soul is sad
And he feels just as meek as a mouse
As he sees the inferior manner in which
His wife sweeps up the house.

—*New York Herald.*

THAT TREACHEROUS MEMORY.

The story he started to tell you
Has collapsed in a terrible moan;
'Tis misfortune sublime;
At the critical time,
The point of his story has flown.

—*Washington Star.*

The juicy watermelon
Has been doin' of its best;
The folks—they kinder cornered it
Out in the bloomin' West

But still the time comes round 'an round,
Whatever they may say
We keep the watermelons
And we're happy on the way!

—*Atlanta Constitution.*

TO THE AUTHOR OF "THE HEAVENLY TWINS."

Tell me Mrs. Sarah Grand
(What I ill can understand),
Why your men are all so horrid,
All with a retreating forehead?"

Why your women all are decked
With every gift of intellect,
And yet—invariably wed
These knights of the retreating head?

She, as bright as a geranium;
He, a simian type of cranium—
Why, with decent chaps all round her,
Choose an atavistic Bounder?

We are apes—well, let that pass;
Need she, therefore, be an Ass?
Tell me, tell me, Sarah Grand,
For I do not understand!

—*Westminster Gazette.*

◆

UNSCRUPULOUS DRUGGISTS.—Teacher. — How many scruples are there in a dram?

Dick Hicks.—Supposed to be three, but most druggists sell 'em without any.

◆

BEWARE OF OINTMENTS FOR CATARRH THAT CONTAIN MERCURY

as mercury will surely destroy the sense of smell and completely derange the whole system when entering it through the mucous surfaces. Such articles should never be used except on prescriptions from reputable physicians, as the damage they will do is ten fold to the good you can possibly derive from them. Hall's Catarrh Cure manufactured by F. J. Cheney & Co., Toledo, O., contains no mercury, and is taken internally, acting directly upon the blood and mucous surfaces of the system. In buying Hall's Catarrh Cure be sure you get the genuine. It is taken internally, and made in Toledo, Ohio, by F. J. Cheney & Co. Testimonials free.

☞Sold by Druggists, price 75c. per bottle.

Men are doing some great things now-a-days in the ways of bridges, waterworks, &c.; but we doubt of any city can show a greater triumph of engineering as to its water supply than ancient Rome. Eight immense acqueducts supplied the city with pure spring water from the hills, delivering forty millions of cubic feet daily. The Claudia acqueduct was forty-seven miles long and 100 ft. high. The Martia was forty-one miles, thirty-seven miles of which were carried on seven thousand arches, 70 ft. high.

The barber shop is a well-known source of danger. The razor can be kept comparatively clean, but not so easily the scissors, the comb and the clippers. Ringworm of the scalp, syphilis, baldness, barber's itch and other skin diseases are clearly traceable to infection in the barber shop. The hands of the barber, the head rest, the towels may all be dangerous. Proper sanitary inspection of barber shops is very necessary, and the time may come when every city will have its barber shop sanitary inspector.—*Pub. Health Mag.*

Ivy poisoning will soon be seasonable; and while it is well for people who resort to the country during the summer to be careful while they pick wild flowers, it may be of use to them to know that, according to a series of cases recently reported by J. Abbott Cantrell, M. D. (*Philadelphia Polyclinic,*) Labarraque's solution (solution of chlorinated soda) is an excellent remedy. It should be applied in full strength by means of a pledget of lint or of diaper cloth, kept constantly wet with the liquid. It will effect a cure in from three to five days.—*The Sanitarian.*

THE REMOVAL OF WARTS.

Hydrarg bichlor..	5 grains
Acid salicyl	1 drachm
Collodii	1½ ounces

This is applied every day, the upper crust of the previous application being removed before a fresh one is made. Usually after four applications the wart becomes so softened that gentle friction will remove it painlessly. If a further dressing is required, a five per cent salicylic-lanolin ointment is all that is necessary.

FOR CHRONIC CONSTIPATION.

Aloes	6 gr.
Strychniæ sulphat	¼ gr.
Extract. belladonnæ	1 1-4 gr.
Ipecac pulv.	5½ gr.
Divid in pil. xij	

Sig.—One every evening

—*Gazetta Medica di Roma.*

THE BABY'S MEDICINE.—The mistress of the house had been to a concert, and when she retured she was met by the servant with:

"Baby has been very ill while you were out, mum."

"Oh, dear," said Mrs. Youngwife, "is he better?"

"Oh, yes, mum, he's all right now, but he was bad at first. I found his medicine in the cupboard."

"Good gracious! What have you given the child?" There's no medicine in the cupboard."

"Oh, yes, mum, there is; it's written on it."

And then the girl triumphantly produced a bottle duly labeled "Kid Reviver."

If you can distinctly and rapidly repeat British breeches, the gold cure has been a success.

"I saw Poorleigh today. As usual, he was finding fault with his physician."

"You should remember, my dear fellow, that Poorleigh is critically ill."

It is a common thing to blame a man's downfall upon whiskey. It is unjust. Whiskey will never trouble you, my son, if you will only let whiskey alone.

First Tramp. "I suppose we shall have to sleep on the cold ground tonight."

Second Tramp. "Don't you worry. Somebody'll make it hot for us before we can get to sleep."

Stranger. "Have you read the new novel that everybony is talking about?"

Skibbler. "I don't *read*. I *write* books."

Stranger. "Oh! Beg pardon. But *you* have read it, I suppose?"

Skimmer. "I have no time to read books. I am a book reviewer."

American Girl. "Oh yes. My home was in California, but I went to school in Boston."

Interested Foreigner. "Ach so! Did you go home at nights?"

St. Peter. "Minister, were you? I don't see many souls to your credit."

New Arrival. "Did n't have time to save souls, St. Peter. I was too busy raising mortgages."

Fond Wife. "Do you love me, Algy?"

Fond Husband. "Love you? Why, I believe I would be ass enough to marry you the second time if I had the chance.

A disordered digestive apparatus is quite frequently responsible for that which passes for irony.

Two men in Illinois have invented a self-opening umbrella. What the public is really clamoring after in the umbrella line is a self-returning one.

"Time is generally the best medicine," but your creditors don't like too much of it, all the same.

It Knocks At Your Door.

A true improvement always receives a welcome in the average American home, the most home-like home in the world. The coal stove, the gas, the water, the sewing machine and the clothes wringer have found an entrance everywhere. Another candidate now appears. It is

Cottolene

the new vegetable shortening and substitute for lard. Thousands have found this as great a blessing as its predecessors. It is now at your door. Will you accept its proffer of better cooking in your kitchen, better food on your table, better health in your household?

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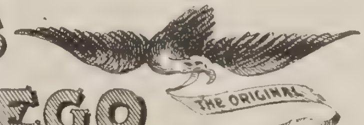

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BEST QUALITY IS GOOD ECONOMY.

THE STANDARD OF EXCELLENCE FOR OVER FIFTY YEARS.

First Assistant Postmaster General, Frank H. Jones, sent the following matter to all postmasters, with orders to post the card containing it in their offices and call the attention of their patrons to it, that their mail could be returned.

"Don't mail your letter or valuable package without having your own address written or printed upon the left hand corner.

This will ensure its return to you if not delivered, and will prevent its being sent to and opened at the Dead Letter Office, Washington.

THE U. S. OFFICIAL POSTAL GUIDE warns us that over 5,000,000 pieces of mail matter go to the Dead Letter Office annually, containing many thousands of dollars; part can be returned to the senders and part cannot. If all letter writers would stick their *Printed Address* on their envelopes the Dead Letter Office at Washington could be abolished."

The above statement of the Post Office Department proves the great value of Gummed Addresses to every man, woman and youth who write letters. Think of it! Over 5,000,000 "dead letters" sent to the "Dead Letter Office" annually containing tens of thousands of dollars, etc., simply because the writers' addresses do not appear on the envelopes. This is a matter too important to be overlooked.

YOUR FULL ADDRESS Printed boldly on **1000** separate slips of postage stamp paper, 500 postpaid to you to stick on your **letters,** books, etc., and one each on **500 parcels of mail** from publishers, etc. to you, **no two alike,** together with our 16 page paper all for **10 cts.** Terms to agents, members of churches, schools, clubs, etc., 2 orders 18c.; 3, 25c.; 10, 60c.; 20 and over, 5c. each address. **O. I. C. U. R** going to order. We've nearly 200,000 customers already. Many from your town. **Your P. M.** can give you their names. THE HERALD, Test No. 48 B. Lum St., Phila., Pa.

She. "I rode down in the same horse car with you yesterday."

He. "Strange I did n't see you."

She. "Not at all. You were sitting down."

Wife. "How people gaze at my new dress! I presume they wonder if I've been shopping in Paris."

Husband. "More likely they wonder if I've been robbing a bank."

The newspapers published in the native tongue of India occasionally contain paragraphs which testify that "bulls" are not confined in Ireland.

One paper, on the day of its birth, came out with two blank pages, and in one of its columns announced with unconscious simplicity that some "specially interesting matter" had been held over "for want of space."

Another journal printed this brief announcement: "Our next paper day falling on Christmas Day, the next issue of this journal will not appear."

Little Dot. "Is it hotter in the country than in the city?"

Little Dick. "Course not."

Little Dot. "Then why do mens wear thick clothes and silk hats in the city, and then, when they go to the country, put on thin clothes and straw hats?"

General (when the bullet proof uniforms become common). "What have you learned?"

Aid. "Victory will soon perch upon our banners. We have filled the enemy's clothes so full of lead that they can't move another step without undressing."

Reporter. "There is a story just come to the office that your daughter has eloped with your footman. Is it true?"

Banker. "Yes, sir, it is true. And you may add that the rascal has taken with him a brand-new suit of my livery."

Exasperated Young Mistress (after a wordy argument with the cook). "Why, Bridget, it's perfectly absurd! Either you or I must be crazy."

Bridget (proudly). "Sure and I wouldn't be so bold as to think ye had no more sinse than to keep a crazy cook."

Little Ethel. "Johnnie took my banana."

Mother. "Johnny, what do you mean?"

Little Johnnie. "It was all in the game, mamma. I said 'Let's play Broadway, and she said 'All wight,' and so she got a table for a banana stand and then I was a policeman and walked past."

Professor (to medical student). Mr. Doselits, will you please name the bones of the skull?"

Student (perplexed). "I've got them all in my head, professor, but the names don't strike me at the moment."

◆

FISHING IN THE 1000 ISLANDS.

ON THE NEW YORK CENTRAL.

Fifty-six pages, beautifully illustrated, nine maps showing exact location of the fish; full information, with numerous accurate illustrations of tackle, etc., will be sent free, postpaid, to any address in the world, on receipt of five 2-cent stamps, by George H. Daniels, General Passenger Agent, Grand Central Station, New York.

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SODA

— USEFUL IN —

Nervous Headache, Sleeplessness, Excessive Study, Acute Migraene, Nervous Debility, Mania, etc.

— DOSE —

A heaping teaspoonful in half a glass of water, to be repeated once after an interval of thirty minutes, if necessary.

It is claimed by prominent specialists in nervous diseases, that the Bromide Sodium is more acceptable to the stomach than the Bromide Potassium. An almost certain relief is obtained by the administration of this Effervescing Salt It is used with advantage in INDIGESTION, the DEPRESSION following alcoholic and other excesses, as well as NERVOUS HEADACHES. It affords speedy relief in MENTAL and PHYSICAL EXHAUSTION.

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CIGARETTES AGAIN.

The cigarette manufacturers, evidently feeling that the frequent exposures of their vile products have injuriously affected the sale, have commenced an attempt to counteract this by the publication of some skillfully written articles on the subject from a scientific standpoint, of which the following is a fair sample.

Admitting all that this writer says, the fact yet remains that cigarettes are made from tobacco stems instead of leaf tobacco, and that they have been found to exert a pernicious influence upon those who smoke them—and this is putting it mildly.

FACTS ABOUT CIGARETTES.

BY F. C. OEHLER.

Sensational articles frequently appear in newspapers, claiming that the standard brands of cigarettes are made from the poorest kind of tobacco and old cigar stumps, and that they contain opium and other poisonous drugs. These statements have been reiterated so often that the majority of people believe them. On searching the medical and scientific journals, I failed to find any statements that cigarettes contain aught but tobacco. If for no other reason, the manufacturer could not afford to put opium in the cigarettes and sell them for four cents a package, as opium is a very expensive drug. Opium, even in minute quantities, would spoil the flavor and taste of tobacco, and probably make an inveterate smoker sick, as the smoke of opium is very disagreeable to one not accustomed to it. It has also been claimed that the paper around the cigarette contained arsenic and lead. This idea probably originated from the fact that minerals are sometimes put in paper to make it weigh more; but thin paper, such as that used in cigarettes, is sold by the sheet, and not by weight, and the object is to get the paper as thin and tough as possible. It is well known among chemists that the addition of a mineral would defeat this purpose, and consequently make the paper less salable. Arsenic is said to be used in the paper to bleach it. Arsenic has no bleaching power whatever; it is sometimes used in colored or glazed paper, but is never used in the manufacture of white paper of any kind. If paper containing mineral substances be burned, the ash is heavy and preserves its shape, because the mineral substance is incombustible and remains after it is consumed. The paper of a cigarette burns to a very small white ash which is less than one per cent. The poisonous substance in the tobacco is the nicotine, and this is present in quantities varying from ½ to 7 per cent. The amount of nicotine in tobacco depends a great deal upon the way it is cured. If the tobacco is carefully cured, it will contain a very small amount of nicotine; but if, on the other hand, it is carelessly cured, it will contain a much larger percentage. When tobacco is ignited the nicotine is mostly decomposed, as it is a volatile alkaloid and easily affected. The tobacco used in cigarettes is carefully cured, and the percentage of nicotine is very small. The following brands of cigarettes were purchased by me in open market in original and unbroken packages. The percentages stated are the amounts found in the cigarettes just as they were taken from the packages:

BRAND.	Per cent Ash.	Per cent Moisture.	Per cent Nicotine.	Per cent Arsenic.	Per cent Opium.
Sweet........	12.93	16.43	.984	None.	None.
Duke's Cameo	13.65	15 41	1.173	None.	None.
Old Judge...	14.74	12.17	1.196	None.	None.
Old Dominion	14.16	12.96	1.321	None.	None.

In the above, to get the amount of nicotine, I exhausted the tobacco with ammoniacal ether in a continuous-extraction apparatus, then expelled the ammonia by heating; this left the nicotine in an ethereal solution. I then decanted off the ether and added water, then heated this solution till all the ether was driven off. This left the nicotine in an aqueous solution, which I then titrated with a solution of sulphuric acid of known strength. The per cent found is very small for tobacco, and is less than found in most cigars and plug tobacco. I carefully tested the papers for arsenic by Marsh's test, and found that there was no arsenic present in any of the above brands. The paper was free from minerals, and burned to a minute white ash.

◆

A FORGOTTEN CREDIT.

The article in our August 15 issue on "The Care of Spectacles" was taken from that most excellent journal, *The Refractionist*, but owing to an unfortunate oversight, or rather owing to its having been put in the printer's hands before it was quite ready, no credit was given. We hasten to make this explanation so that our readers may know the source whence so much good common sense advice came.

JOSEPH BURNETT.

When a prominent man passes away suddenly it gives us a shock, and when that man was one whom to know it was to love, we feel the sad loss. It was the privilege of the writer to have met Mr. Burnett in his office in Boston some ten years ago. We were strangers. The kindly greeting, willingness to impart valuable information and encouraging helpfulness and advice then extended will never be forgotten. Mr. Burnett was a thorough gentleman, well informed in business matters, an expert in his own particular line of business and one of the few who believed that the public had a right to expect and would prefer honest goods at fair prices, and who by practicing on that theory was a shining example to other business men. These traits in his character enabled him to make a great success of the famous house of which he was the honored head, and upon that sure foundation an enormous business has been built up. Wherever the name of Joseph Burnett & Company is seen on a label, and that is all over the globe, the purchaser knows that he is getting full value for his money and the article is just as represented.

We abstract the following brief sketch of Mr. Burnett from an exchange.

Mr. Joseph Burnett, the venerable founder of the widely known Boston firm of Joseph Burnett & Company, manufacturers of flavoring extracts, met with a fatal accident last Saturday afternoon at 4 o'clock while riding in his carriage near the electric car station in Marlboro.

An electric car caused the horse to take fright and became unmanageable. The carriage was overturned and Mr. Burnett was thrown some distance, striking his head upon the ground.

He was picked up in an unconscious condition, and conveyed to his summer home in Southboro. Medical assistance was at once procured, but the advanced age of Mr. Burnett was against his recovery, and he died at 7 p. m.

Mr. Burnett was the founder of Deerfoot Farm and was the moving spirit in establishing St. Mark's school.

Mr. Burnett received his earlier education in the district schools of his native town. When about 15 years of age he left his home and went to Worcester, where he remained until 21. He attended the English and Latin schools of that city, but never received a collegiate education.

He studied medicine but never practiced it, but acquired the familiar title of doctor, by which he was everywhere known.

In 1837 he associated himself with Theodore Metcalf, the Boston druggist, as clerk, and in 1854 left that house, having become a partner in the concern in the meantime, and, disposing of his interest, entered the manufacturing chemist business on Central street. The flavoring extracts and other products of this manufactory have acquired world wide fame. The old stand at No. 27 Central street has been known in this connection for 40 years.

In 1882 Mr. Burnett went abroad, at which time two of his sons, Mr. Henry B. and Mr. Robert M. Burnett, entered the concern as active partners, since which time they have had the exclusive management of the business, fully maintaining the high standard of all the products of Joseph Burnett & Company, so that, although the honored head of the firm has gone, the goods manufactured by the concern will continue at that high standard which makes them today the synonym of excellence and purity.

In 1837 Mr. Burnett established the perfumery and high standard extract manufacturing business, in which he made a fortune, and which, from small beginning, grew to enormous proportions, and was known throughout this and other countries. He was particularly well versed in the culture of the vanilla bean and its extract.

Mr. Burnett and his son made a visit to Mexico, and there studied the growth of the vanilla bean in its native country. While there he was accorded unusual privileges, and remarkable honors were bestowed upon him by the Mexicans.

He was president of the Boston Druggists' Association in 1878 and 1879, and it is said of him that during his whole business career not one of his competitors for trade ever had occasion to speak an unkind word of him. He was also a pioneer in high bred stock.

HOUSEHOLD.

TESTED RECEIPTS.

Every Receipt here given is original, has been practically tested by the American Analyst and is, therefore, confidently recommended.

CORN SOUP.

Split the grains of one dozen ears of corn and scrape. Boil the cobs in enough water to cover them for ten minutes. Strain this water and use one quart. Add to it slowly one quart cream, then the corn. Season and cook fifteen minutes. Milk can be used instead of cream, thickened with one tablespoonful each of flour and butter rubbed together.

FRENCH VEGETABLE SOUP.

To a leg of lamb, moderate size, take four quarts water. Of carrots, potatoes, onions, tomatoes, cabbage and turnips take a cup each, chopped fine, salt and pepper to taste. Let the lamb be boiled in this water. Let it cool; skim off the fat that rises to the top. The next day boil again, adding the chopped vegetables. Let it boil three hours the second day.

LOBSTER CUTLETS.

Mince the flesh of lobster very fine, season with salt, pepper and spice. Melt a piece of butter in a sauce pan, mix with it one tablespoonful flour, add the lobster and some finely chopped parsley; mix with some good stock; remove from the fire, and stir into it the yolks of two eggs. Spread out the mixture, and when cold cut into cutlets, dip carefully into beaten egg, then into fine bread crumbs, let them stand an hour, and repeat. Fry a rich brown. Serve with parsley.

CLAM FRITTERS.

Twenty-five clams dried well. One pint flour, one tablespoonful baking powder, two well beaten eggs, one-half pint milk, nearly as much clam liquor. Stir in the clams. Fry by dropping spoonfuls in hot lard. Clams can be chopped.

HICKORY NUT KISSES.

Whites of six eggs beaten stiff, one pound powdered sugar, two tablespoonfuls flour, and one pound hickory nut kernels. Drop on well buttered tins and bake in a moderate oven.

HERMITS.

Three eggs, one cup butter, one and one-half cups sugar, one cup seeded chopped raisins, a very little citron chopped fine, one teaspoonful each of cloves, allspice and cinnamon. Flour enough to roll them out. Cut in rounds.

COCOANUT COOKIES.

One cup butter, two cups sugar, two eggs, one cup grated cocoanut, two teaspoonfuls baking powder, flour enough to roll them. Roll very thin, bake quickly, but do not brown.

MARBLED CHOCOLATE CAKE.

One-half cup butter and one cup sugar beaten to a cream, one-half cup milk, one and one-half cups flour, one teaspoonful baking powder, whites four eggs added last. Take one cup of this mixture, add to it five grated tablespoonfuls chocolate wet with milk and flavor with vanilla. Put a layer of white batter in cake pan, drop the chocolate batter with a spoon in spots, pour over the remaining white batter and bake.

CHOCOLATE LAYER CAKE.

One cup sugar, one-half cup butter, two eggs, half cup milk, two teaspoonfuls baking powder.

FILLING.

One-half cup Baker's chocolate grated and dissolved in a small cup milk, let it boil, add half cup sugar, small piece butter, a little salt, flavoring. Put between layers.

NEW DEPARTURE IN BREAD MAKING

I take much pleasure in calling your attention to a new process of bread making which is used all over Europe and is now being introduced in the United States. It bids fair to revolutionize present ideas of bread making, and will prevent many cases of indigestion in your patients. I hope you are interested to know about the virtues of this valuable scientific discovery and so I take the liberty to bring it to your attention.

THE OLD WAY

was to make bread according to the theory of fermentation borrowed from brewers. The theory was that the gluten of the strong flours, which is the principal ingredient of the bread loaf of to-day, could not be softened unless exposed to a hydrolising influence during a long period say 10 to 12 hours. This we consider to be wrong, for the dough is thus exposed for a longer time than is necessary to the deleterious influences of too high or too low temperature and other atmospheric influences.

If the fermentation goes on at a low temperature the bread will be "starved."

If the thermometer has gone up, the bread is likely to be sour.

We all know how the yeast can reproduce itself over and over again. Yeast requires oxygen and nutritious matter to carry on this reproduction. In dough the yeast cell absorbs oxygen from starch in a roundabout way, by first changing the starch into invert sugar, which it afterwards dissolves into its elements. After this has been done the yeast absorbs the oxygen and the residue is thrown off in the form of carbon, dioxide gas and alcohol. In a stiff dough, and especially if the dough is not moist enough, this reproductive power of the yeast cell is very slow. To help matters along

POTATOES

have been used, from the fact that they contain but little nitrogenous matter, and thus give the yeast cells less work to do in obtaining the oxygen needed. The disadvantages of using potatoes to any great extent are obvious.

THE NEW WAY.

It was not until Messrs. Laconte Freres in the North Province of France begun their experiments with malt extracts that bread making was essentially improved. They found, by experiments, that by giving the yeast a malt extract to act upon, it would accomplish its work in a remarkably short time.

These experiments have been confirmed by such authorities on baking as Dr. Goodfellow, Prof. Jago and John Blandy, Esq., as well as by chemists and bakers everywhere in Europe.

AN EXPERIMENT.

To prove how stimulating malt is on yeast take: Two half-pint glasses, half filled with water at about 90°F. Put in each glass an equal quantity of yeast or ferment, and a teaspoonful of flour, add to one of the glasses a half-teaspoonful of Laconte's Malt Extract and set both glasses in a warm place. In quarter of an hour the ferment containing the malt extract will come up with a fine top on it while the other will not then have commenced to work at all.

ORDINARY GLUTEN

of the flour, in its natural state, is not unlike india rubber; is incapable of absorbing any quantity of water, or of being subjected to fermentation. Under the fermentation aided by the malt extract, the gluten is rapidly dissolved and rendered fermentable.

The gluten is also rendered highly absorbent, and this accounts for the large yield and for the moisture of the bread. These are very important points.

THE RAPID FERMENTATION

of the yeast cell aided by the malt extract prevents the souring ferments (lactic and acetic acids) from producing sour bread. These souring ferments are ineffective or not active as long as the "sweet fermentation" goes on.

The more powerful yeast cells prevent these souring ferments from action as long as the yeast cells are young and active.

But a period soon arrives when these souring ferments overpower the yeast or ferment and become masters of the situation and

SOUR BREAD

is the result.

The more rapidly the "sweet fermentation" can be carried on the sweeter the bread will be.

MALT EXTRACT

added to the ferment will lessen the time of fermentation and prevent destruction of the gluten, the most important part of the bread.

I take the liberty to reproduce what Dr. Goodfellow, the eminent authority wrote in "*Baker's Record*," July 18, 1891.

Dr. Goodfellow in an article in the "*Baker's Record*" of 18th July, 1891, writes:—"The use of Laconte's Extract in white bread makes the loaf more digestible and holds its moisture" (adding, that he himself ate three days' old bread baked with it, and found it very plesant). "The flavor it creates is decidedly sweet (nutty), and while I have bought many loaves throughout London made with this preparation, I have never yet found a trace of sourness in any of them. Carefully considering them, all points, I may state that bread baked with Laconte's Extract is better than ordinary bread, for the following reasons:—

1st. It is more digestible.

2nd. Its flavor is better.

3rd. It keeps moist for a longer period.

4th. It allows bakers who at present use potatoes in the manufacture to dispense with them."

Ever on the lookout for improvements in bread making, I tested several different malt extracts and found them capable of doing all that is claimed for them. I have adopted this method altogether in my bakeries, and I shall take much pleasure in presenting you with a loaf of my Quaker bread. Every loaf of this kind is stamped "Althans Quaker Bread" to avoid substitution and fraud.

You will find that this bread is neither starved nor sour; that it remains moist and sweet for some time and will come as near to a perfect bread as it is possible to produce with our present scientific knowledge of chemistry.

JOHN H. ALTHANS,

181 to 187 Brook street, 162 North Main street, 713 and 1,193 Westminister street, Providence, R. I.—*R. I. Medical Science Monthly.*

◆

SHAMPOO.—A good shampoo, for removing dandruff, etc., from the scalp, may be prepared by dissolving borax in water, with or without the addition of a little carbonate of ammonium. Very generally carbonate of potassium is used by barbers. The proportion of these salts is about ½ oz. to the pint. A stimulating effect may at the same time be produced by the addition of some alcohol or bay rum. We think the following a very good preparation:

Borax	1 oz.
Carbonate ammonium	½ oz.
Aromatic spirits of ammonia	1½ f. oz.
Bay rum	4 f. oz.
Water, to make	1 quart.

MOUTH BREATHING.

(C. Gurnee Felows, M. D. in *The Northwestern Sanitarian*).

The mouth is the entrance to the digestive rather than to the respiratory organs.

Mouth breathing is neither natural nor healthful, but nature has so provided, that when, through diseased conditions, the nasal passages are occluded, we may obtain air through the mouth.

The nose, however, is the entrance to the respiratory tract.

Within the cavity of the nose are scroll like bones, covered with mucous membrane, which greatly increase the surface of exposure in order to furnish the three special functions of heating, moistening and filtering the inspired air. The fact that mouth breathing is injurious is not sufficiently known. The air rushes into the lungs in such volume that its temperature is not regulated, its force is not controlled, it is in no way purified and can thus easily give rise to diseased conditions of many kinds.

The winter season is the most prolific in the production of these resulting maladies, because of the difference in temperature of the external air and the body; and among the diseases liable to arise are pneumonia, bronchitis, laryngitis, croup, etc., whereas the same air taken normally through the nose, being prepared for its reception into the delicate lungs, simply fulfills the natural law, and no harm results.

The habit of mouth breathing generally arises from some obstruction in the respiratory tract, but may be prevented in most cases by timely care. Parents realize too little the importance of nose breathing. In the minor ailments of children, when the nose may be slightly obstructed for a time, it can still, by persistent effort, give full respiration; but because it is easier, the child breathes through its mouth and acquires more or less of the habit.

If there is obstruction at any time, it is particularly liable to occur at night, showing itself by restless sleep, heavy breathing and a cross child in the morning. It is quite safe to say that when a child persistently breathes through his mouth there is something radically wrong. There are several forms of obstruction to free nasal respiration,—thickening of the mucous membrane within the nasal chamber, due to repeated colds; —the presence, between the nose and throat, of glandular tissue, normal in character but unnaturally developed; enlargements of the tonsils and glands of the neck.

Each of these conditions may be remedied by skillful treatment, and a child who has been restless and snoring may be made to sleep quietly and restfully.

Persistent attempts to breathe through the nose will often be rewarded by success, and prevent the development of the disease commonly called catarrh.

Catarrh itself is not a disease, but a symptom of some obstruction or irregularity within the respiratory tract. It is much easier prevented than cured, while both are possible.

Keep your mouth closed and breathe through your nose.

THE NEED OF SLEEP.

It is difficult for one who has had no occasion to familiarize himself with the subject to appreciate the consequences which attend depriving the body of the necessary amount of sleep. The symptoms which follow such a deprivation afford a striking example of the intimate relation of every part of the body to every other part.

It may be that the sufferer has been placed in circumstances under which sleep, owing to the demands made upon his time by other matters, is practically prohibited; or perhaps he has nerved himself to perform a certain task in a specified time, and does not obey the dictates of nature. In either event the result is the same. The unhappy victim suddenly finds that he does not feel the need of sleep. He may at first be inclined to congratulate himself, but this period of excitation does not last long, for, try as he may, he can not bring back sleep to his now worn out body.

From this point the trouble rapidly increases. Especially is the fact demonstrated that the need of sleep is felt by the entire system. It is true that nervous systems predominate, and that, if the condition of the patient is not ameliorated, the case soon becomes one of nervous prostration. But every organ of the body suffers equally with the brain. The stomach is upset, the appetite impaired, and emaciation and debility follow.

The treatment of a person suffering from lack of sleep is unfortunately much compromised by the efforts of the patient himself. Under the impression that an opiate is required, he begins the systematic administration of some sleep-producing powder. Nothing could be more pernicious, as is seen when, after having tried in turn every remedy, the sufferer finally finds it next to impossible to obtain any rest except by such unnatural means.

Healthful sleep is needed, and this is to be obtained only by careful and prolonged treatment under the guidance of a skilled medical adviser.

Opiates should never be administered by the patient himself, and never with the object of directly producing sleep.—*Youth's Companion.*

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Don't dampen your fingers with your tongue when counting paper money. A peculiar case of disease contracted in this way is reported from our neighboring town of Delaware. A short time ago County Treasurer Adams received taxes in the eastern part of the county, and neglected to take along a sponge which he always uses to moisten his fingers when counting bills. He was consequently obliged to use his tongue in place of the sponge, and the germs of tonsilitis, from which disease he is now suffering, passed into his throat from infected bills. Physicians pronounce it a most singular case.—*Merchant's Sentinel.*

MEDICAL.

PERIOD OF INFECTION.

The period of infectiousness of contagious diseases, according to the State Health Board of Pennsylvania, is:

Small-pox.—Six weeks from the commencement of the disease, if every scab has fallen off.

Chicken-pox.—Three weeks from the commencement of the disease, if every scab has fallen off.

Scarlet-fever.—Six weeks after the commencement of the disease, if the peeling has ceased and there is no sore nose.

Diphtheria.—Six weeks from the commencement of the disease, if sore throat and other signs of the disease have disappeared.

Measles.—Three weeks from the commencement of the disease, if all rash and cough has ceased.

Mumps.—Three weeks from the commencement of the disease, if all swelling has subsided.

Typhus.—Four weeks from the commencement of the disease, if strength is re-established.

Typhoid.—Six weeks from the commencement of the disease, if strength is re-established.

Whooping-cough.—Six weeks from the commencement of the disease, if all cough has ceased.

Under judicious treatment the period of infectiousness may be shortened, but no child suffering as above should be admitted to any school after a shorter absence, and then should be provided with a medical certificate that he or she is not liable to communicate the disease.

Length of Quarantine.—Teachers or children who have been exposed to infection from any of the following diseases may safely be re-admitted to the school if they remain in good health (and have taken proper means for disinfection) after the following periods of quarantine:

Diphtheria, 12 days; scarlet fever, 14 days; small-pox, 18 days; measles, 18 days; chicken-pox, 18 days; mumps, 24 days; whooping-cough, 21 days.

Adults may be admitted immediately, if they disinfect their clothes and persons.

REMOVAL OF BONES FROM THE THROAT.

Dr. O. Schlep (*Wiener Medizinische Presse* No. 13, 1894), in those cases where a fish-bone or any kind of a bone has been swallowed, or is lodged in the throat, removal after cocainization and with the aid of the laryngoscope is impossible, recommends drinking some dilute acid in order to soften the fragment. This suggestion he obtained from the popular employment of vinegar in such cases in Germany. Experiments with vinegar demonstrated that small fish-bones are somewhat softened in fifteen to twenty minutes. Fragments of bone require a longer time, while small scales from shell fish are softened in one to two hours. Besides vinegar he has also tried ⅕ per cent solutions of hydrochloric acid, with and without pepsin. Its action is decidedly more energetic than that of vinegar, fragments of lobster's shells only excepted. As hydrochloric acid is a normal constituent of the gastric juice, it rather deserves the preference in rendering fish-bones, etc., non-injurious. It is employed as follows: In case that the bone is situated high up, a stick, around the end of which is rolled a tuft of cotton, is dipped into a two per cent solution (fourteen drops to fifty gms. of water) of hydrochloric acid and repeatedly pressed into the folds of the pharyngeal mucous membrane. In case that it is lower, or if the bone has passed into the stomach, this same solution may be frequently drunk.

DEATH AS IT IS.

Perhaps the most common mistake of the lay mind is the association of the dramatic with the conception of death. Nothing is more common than to hear from the pulpit, pictures in words of excitement, of alarm, of terror, of the deathbeds of those who have not lived religious lives; yet, as a rule, if these pictures are supposed to be those of the unfortunates at the moment of death, they are utterly false. In point of fact, ninety-nine of every hundred human beings are unconscious for several hours before death comes to them; all the majesty of intellect, the tender beauty of thought or sympathy of charity, the very love for those for whom love has filled all waking thoughts, disappear. As a little baby just born into the world is but a little animal, so the sage, the philosopher, the hero, the statesman, he whose thoughts or deeds have writ themselves large in the history of the world, become but dying animals at the last. A merciful unconsciousness sets in, as the mysterious force we call life slowly takes leave of its last citadel, the heart, and what is, has become what was. This is death!—*Cyrus Edson, in North American Review.*

OLEO.

It may be remembered that Hatch's bill, aimed against butter substitutes, failed to pass last session. He is now trying to help Grout's bill to pass, which is meant to accomplish the same results, i. e., to kill artificial butters. This bill is exactly the same as the one known as the "Hill bill, 1876," introduced into the Senate for the same object. The effect of the bill would be to limit commerce in a food product between the several States and with foreign countries. The exact words of the bill are as follows: "Be it enacted by the Senate and the House of Representatives of the United States of America, in Congress assembled: That all articles known as oleomargarine, butterine, imitation butter, or imitation cheese, or any substance in the semblance of butter or cheese, not the usual product of the dairy, and not made exclusively of pure and unadulterated milk and cream, transported in any State or Territory or remaining therein for use, consumption, sale or storage therein, shall, upon arrival in such State or Territory, be subject to the operation and effect of the laws of such State or Territory enacted in the exercise of its police powers, to the same extent and in the same manner as though such articles or substances had been produced in such State or Territories, and shall be exempt therefrom by reason of being introduced therein in original packages or otherwise." The passage of this bill would destroy the usefulness of the original package decision, for if set aside in the case of artificial butter it may be set aside in a dozen other food bi-products. The effect of this bill would be to limit commerce between the several States and foreign countries in a food product. The State can regulate this article as soon as it is mingled with the property of the State, but cannot prevent it from coming into the State, stamped and branded as oleomargarine, and any consumer may buy it as oleomargarine and eat it. The State can only prevent it from coming into the State by proving it to be dangerous to health, and hence the anxiety of the New York Mercantile Exchange and other butter dealers to get this vicious bill passed. They know it is utterly impossible to show oleomargarine to be other than a wholesome, cheap and admirable substitute for butter.

OLEO LEGISLATION.

Considering the strenuous efforts made by the grangers and truckling politicians to hamper the oleo trade and work up prejudice against it by legislative enactments, the business has made wonderful strides and is bound to steadily improve. The House Committee on Agriculture has reported favorably on both the Hill and Grant bills, which are identical in their provisions and aim to subject the sale of oleomargarine to the State in which the sale is made, regardless whether the goods were produced in the State and offered in the original package or not. Of course the grangers, who are against all unions, combines and trusts except their own, are pleased with the progress of this class legislation, but "he who laughs last laughs best," and some day the fact that good oleo is as good as good butter and far superior to the alleged butter produced by the vast majority of agriculturists, will dawn upon the dairymen, who from selfish interests have been blinded to facts well known to a large and increasing body of consumers.—*Butchers' Advocate.*

OLEO STATISTICS.

The opponents of oleomargarine have a bitter pill to swallow. While the internal revenue collections from all other sources have decreased during the past fiscal year ending June 30, those from oleomargarine have continued to increase. The revenue derived under the oleomargarine tax law from the time of its enactment has been as follows:

Fiscal year ending June 30—	
1887	$ 723,948
1888	864,139
1889	894,247
1890	786,291
1891	1,077,924
1892	1,266,326
1893	1,670,643
1894	1,723,489

The increase during the past fiscal year over that preceding has been more than $50,000, and more than $400,000 as compared with the largest previous year, while nearly all other sources of public revenue have shown a considerable decline. And all this in the face of a vicious and unrelenting war waged upon oleo by the dairy interests of the East.

The collections of oleomargarine tax indicate an increase in the average monthly product for domestic consumption, and the reports of exports have already shown that these were larger than for any previous year. The average monthly production reported by the Government has risen from 2,800,000 pounds for the years 1887 to 1890, to more than 5,600,000 pounds per month during the fiscal years 1893 and 1894, or more than double the amount of the earlier years.

The exports of oleomargarine and oleo oil from this country for the past fiscal year, as compared with those preceding, have been as follows:

Fiscal Year:	Oleomargarine, Pounds.	Oleo oil, Pounds.
1894	3,882,141	123,295,895
1893	3,470,054	113,939,363
1892	2,610,837	91,581,703
1891	1,986,743	80,231,035
1890	2,535,926	68,218,098

The past fiscal year has therefore been the banner year in production and exportation of oleomargarine, and this has been a time of depression throughout the world, and where there has been a very general demand for the cheapest forms of products. The showing goes to confirm what has been claimed for oleomargarine as a staple article of our own and foreign markets. From the time of the enactment of the law the production and domestic consumption and export have steadily increased, except at times when butter has been abnormally cheap; and the increase has been greatest when butter has been high in price, or when the people have felt the pressure of hard times and have attached more importance to the difference in price between the two articles.

The statistics given show plainly the injustice of the Federal laws formed for the restriction of the traffic in oleo. Now that it is conclusively proved that oleo will not down, they should certainly be revised to the due recognization of the importance and growth and necessity of the oleomargarine industry.

ADULTERATION.

DRUG STORE LIQUORS.

The committee on adulterations of the New York State Pharmaceutical Association says in its recent report: "It is probable that our liquor supplies are tampered with as much or more than any other class of goods carried by pharmacists. Of five samples each of brandy and whisky as supplied to the metropolitan trade, only two of one and one of the other could be deemed good. Two of each contained less than 40 per cent of alcohol by volume, and three of the brandy and four of the whisky were colored with caramel and flavored with essential oils. Every druggist should test his stock of such goods and report to his jobber. The State liquor law has practically made it impossible for a druggist to sell enough in ten years to pay his license for a single year. There are no drug stores known to this committee where doctors prescribe enough liquor to pay anything like $20 per year. If, then, any is kept in stock, it should be of the best quality. Any pharmacist can apply one or two rough tests that will answer his requirements. When half an ounce of liquor is shaken up with two drams of concentrated ether, on settling it should show a line of demarcation at the same height as when the same test is applied to a sample of dilute alcohol that he knows contains 50 per cent by volume of absolute alcohol. On evaporating a weighed quantity over a water bath, the dried residue should not weigh more than one four-hundredth of the total weight, and should not taste or smell unusually sweet or have a spicy flavor."

Druggists especially should be sure that the liquors they carry be unadulterated and of the best quality.—*Pharmaceutical Era.*

ADULTERATION OF CHOCOLATE.

If we turn to chocolate we find the same flagrant adulteration. The vilest chocolate sold in this country comes from small houses on the Continent. It is composed of chicory, common cocoa, burnt ground almonds, red ochre, coarse brown sugar, shell dust, potato flour, and storax (a substitute for vanilla flavoring). A few weeks ago a quantity of chocolate creams were put up for sale by auction in London. They were made by an English manufacturer, now retired from business. His process was a patent one. There was not a single atom of cocoa in the chocolate. Ground locust beans, chicory, cocoanut butter, and farina were the constituents. Yet the goods were sold under an enticing name. There is chocolate now being sold in the streets of London which contains shell-dust, fat, paraffin, wax, farina, common sugar, and brown coloring. The paraffin wax is perfectly insoluble; it gives the necessary gloss to the whole.

A delectable chocolate cream sold "down East" is made from the following recipe: Thirty-six pounds of sugar, ten pounds of sago flour, fourteen pounds of shell-dust, sixteen pounds of fat or oil, five pounds of cocoa, one pound of brown coloring, and two pounds of locust beans. This is the "chocolate" covering; the white interior—cream—is composed of glucose and sugar.—*Confectioners' Journal.*

ROOT-BEER EXTRACT.

The so-called root-beer extracts on the market contain roots in name only. The following may be taken as a representative formula:

Caramel Water } ââ......	4 pints.
Alcohol (94 per cent)..	7 fluid ounces.
Oil Sassafras.........	1 1-2 fluid ounces.
Oil Wintergreen......	3 4 fluid ounce.
Citric Acid............	160 grains.

Dissolve the oils in the alcohol, and add water. Mix thoroughly with the caramel, and add the citric acid. Three ounces of this extract will make five gallons of root-beer.

Tincture vanilla is sometimes added, and serves to blend the flavors nicely. A small quantity of liquorice mass is also added to some extracts.

The handsome profit that exists in this preparation should induce pharmacists to market extract of their own manufacture.—*Bulletin of Pharmacy.*

SEWAGE-FED FISH.

M. J. Lawrence-Hamilton, M. R. C. S., contributes to the *Vegetarian* an interesting paper on this subject. He shows that sea-side towns turn their sewage into the sea, and many food fishes congregate about the outfalls, and that the danger to health is consequently great. Cod, turbot, sprats, herrings, pilchards, oysters, clams, limpets, periwinkles, mussels, lobsters, crabs, and the like are fond of sewage-fed waters in moderate amounts, while eels, tench, and carp can thrive in much more filth-polluted waters. Immature herrings, sprats, &c., called whitebait, are always eaten whole, unclean, and unbled, ungutted, and often like bigger fish, insufficiently cooked. Whitebait are very fond of sewage outfall. Oysters, together with their contained sewage water, are eaten raw, to which custom the enteric fever of the Duke of York was attributed, as well as the recent epidemic of Asiatic cholera in Constantinople. Scallops, cockles, mussels, and other favorite bivalves are likewise unsuspected causes of preventable epidemic diseases. Lobsters and crabs are frequently baited and set about sewage outfalls. Dr. Lawrence-Hamilton is of opinion that ordinary fish should be fried between 360 deg. and 375 deg. Fahr. if the consumer is to run no risk of disease from the putrefactive matter which the fish has fed upon and lived in. He points out that "food inspection, especially as regards 'fish,' is an absolute farce, as the consumer is unprotected," and that there is no law forbidding the sale of sewage-fed aquatic and amphibian animals.

TO INVESTIGATE OIL ADULTERATION.

As a sequel to the many accidents that have resulted recently from the use of oil stoves, State Inspector of Oils, Mahlon D. Young, will make an investigation for the purpose of finding whether or not the oil sold in this city for use in stoves and lamps is adulterated, and, if adulterated, in what manner. It is said that all the oil leaving the refineries has stamped upon the barrel the test marks showing the quality. A common means of adulteration resorted to by retailers is to purchase a barrel of high test oil and several barrels of the 100-degree test, the lowest allowed by law. When the high test oil is run off the barrel is filled again and again from the low grade barrels.—*Public Ledger.*

INVENTIONS, SCIENCE, ETC.

NO RED CLOVER HONEY.

"Why do we never have red clover honey for sale?" said the dealer. "Well, for the simple reason that there is never any red clover honey made by honey bees. There is no blossom so rich in stores of sweetness as the red clover blossom, as every schoolboy whose privilege it is to pluck and suck their nectar well knows. But the honey bee never collects those sweets for its use, because it cannot. The corolla tube of the red clover is so deep and small that the bee cannot reach the honey stored at the base of the tube. The bee knows this, and if you will think a moment you will remember that you never saw a honey bee, either wild or a hive-dweller, on a red clover blossom.

"These wise and busy insects do not waste their time in efforts to obtain sweets that are beyond their reach. But the lumbering bumble bee levies tribute on every red clover patch in his bailiwick. As smart as the honey bee is, it has yet to learn a trick that is as old as the hills to its big and more stupid cousin. When the bumble bee lights on a head of red clover he punctures a hole in the base of the corolla, and thrusting in his proboscis, sucks out the nectar. It used to be a favorite but cruel pastime among the boys of the rural districts to capture the bumble bee, pull it apart, and take out its honey bag—a transparent sack as big as a small pea, filled with the most delicate of honey, the honey of the red clover—and eat the sweet morsel, or, rather let it burst in the mouth and spill its incomparable nectar. As any one who has thus robbed the bumble bee of its life and its hoard of sweets will never forget the delicious quality of the honey thus obtained. Unfortunately, this big, clumsy bee is not much of a honey maker. You might rob a score of bumble bees nests and not get a quarter of a pound of honey; and, besides, these nests are few and far between. Consequently we will have to wait until the hive bee learns to drill into the blossom to get the nectar before we can have red clover honey for our buckwheat cakes and waffles."—*N. E. Grocer.*

SCALES USED BY CHEMISTS.

The dainty little scales employed by the prescription clerk seem wonderful enough, determining as they do, to the fraction of a grain, the quantity of the substance placed upon them, but in comparison with balances employed in the more delicate operations of the chemist, they are rough and coarse, says the St. Louis *Globe Democrat.*

The common scales employed by the chemist in his ordinary work appear delicate enough to the unskilled observer, to whom the difference of an ounce or so would be of no consequence at all, for these marvelous little balances will turn with such nicety as to mark a difference of one-tenth of a milligram.

It takes sixty-four to make one grain, and as a grain of most substances can be taken up on the point of a penknife, almost any one will concede that a scale which will make note of so small a quantity of matter and record it with absolute accuracy, must be a very delicate instrument indeed.

But this delicacy is a trifle when compared to that of the most exact instruments made for the finest grades of chemical research. A paragraph is now going the rounds of the papers about a pair of balances at the mint at Philadelphia.

They are so easily affected, it is said, by a difference in weight that after exactly balancing two bits of paper, if one is taken out and a name written on it, with lead pencil, the addition in weight will at once be detected. The story is impressive, but gives no idea of the wonderful power of discrimination possessed by the finest quality of chemical balances.

If such a test were applied to one of those instruments, the opposing scale would kick the beam with a violence that might startle the experimenter out of his good manners. For these marvelous little instruments can determine with infallible accuracy the weight of a particle of matter so minute that it amounts to no more than one-hundreth of a milligram, or 1-640 part of a grain. In other words, take on the point of a penknife a grain of quinine, divide it (if you can) into 6,400 parts, and the balance will weigh one of these parts and inform you whether it is too heavy or too light.

BONES OF MAN AND BEAST.

THE MOST VALUABLE BONES IN THE WORLD—HUMAN SKELETONS AND THE TRADE IN THEM; THEIR USE AS A FERTILIZER—BONES OF SAINTS AND SINNERS—A CARGO OF HUMAN BONES—EGYPTIAN MUMMIES AS FUEL FOR LOCOMOTIVES.

[RENE BACHE IN *Boston Transcript.*]

Funk Island—that is, a part of it—has been reproduced for exhibition at the National Museum. It was on that lonely rock, thirty-two miles off the coast of Newfoundland, that the now-extinct Great Auk had its principal roost. Fifty years ago the last individual of the species perished. It is represented now by a skeleton, worth $600, standing by a heap of bird remains such as chiefly compose the surface soil of Funk Island, while alongside is an egg of the fowl, valued at $1,500, together with the inner skin of another egg. The National Museum possesses nearly all of the Great Auk bones in existence; they are the most costly bones in the world.

The finest collection of skeletons in the world is stored at the National Museum. They are arranged in a series so as to run upward from the lowest fishes through the reptiles and birds to man. Human bones are much cheaper than those of many other animals. One can buy a nicely-articulated skeleton of a man for $40 or of a woman for $50—sex makes some difference in the price—whereas the skeleton of a gorilla costs $300, of a whale $150, of an elephant $400, of a lion $75, of a horse $70, of a cat $12, and of a python $75.

The bones of a human being are nearly one-quarter water during the life of the individual. They are chiefly composed of phosphate of lime, but contain a good deal of animal matter and other elements. In the skeleton of a man are nearly four pounds of the metal calcium, which is many times more valuable than gold, being worth $300 an ounce. Thus in the osseous framework of the average tramp may be found material with a market value of about $18,000, but the trouble is to separate it from substances with which it is combined; that is what makes calcium costly.

It is only in bones that phosphate of lime is found in anything like a pure state. Everybody knows the value of that material as a fertilizer, but it is only recently that human skeletons have been imported into this country to grow crops with. Not long ago a shipment was made from Mexico to the United States of ten car-loads of human bones, said to have been obtained from ancient mounds in southern Mexico, but more probably gathered from various old and abandoned cemeteries. As these remains were fragments of unassorted skeletons, it was estimated that 50,000 individuals were represented in the lot.

This would not be considered a novelty in Europe. Years ago English farmers used human bones to some extent to fertilize their land. The battle-field of Waterloo was for a time the base of supplies, and this was supplemented by mummies from Egypt ground to a fine powder. The mummies were fetched for this purpose by the cargo, and the preserved corpses of people dead for thousands of years doubtless formed part of the consignments; but the bulk of the material consisted of mummies of cats and other small animals. The Egyptians of old used to mummify the cat, ibis and other creatures which they regarded as sacred.

In ancient Egyptian tombs are found great numbers of copper boxes, opening at one end by a slide, which contain mummies of cats, hawks, ibises, and now and then snakes and small crocodiles. Mummies are a recognized commercial article in that country today. For a long time locomotives were run between Cairo and Suez with no other fuel. Corpses of royal personages 3,000 years old and upward fetch high prices. The processes adopted for their presevation began with the removal of the intestines. Then the brain was taken out through the nostrils, and the body, after being soaked in preservative substances, was wrapped round and round with bandages. The bundle thus made was placed inside of a papier mache case formed of a pulp composed of linen and whiting, and this was enclosed in a series of wooden coffins.

Less than a year ago the Austrian barque Vila was deserted by her crew. Later she was picked up as a derelict off Cape Hatteras and fetched into the port of New York. Her cargo was found to consist in large part of bones, and of these one-fourth were human. The balance was composed mainly of the bones of horses and cattle. In one corner of her hold was a great heap of human skulls. Nobody knows to this day why the crew deserted the vessel in mid-ocean. She was worth $40,000, including her freight. The grewsome character of the latter was added to by frightful odors and the presence of swarms of blue flies. Information obtained respecting the barque from Alexandria, in Egypt, showed that the bones had been collected in deserts and cemeteries of that country and were shipped to the United States for use as fertilizer.

The preparation of human skeletons for market is quite an important industry. The chief centre for this branch of commercial activity is Paris, where three concerns are engaged in the business on a considerable scale. They obtain the requisite supplies of raw material in the shape of bodies from public institutions, most of them being those of paupers and criminals who have died in the asylums and prisons. The French Government considers it a good plan to turn to a useful account in this way after death the thieves and murderers who have been enemies of society during their lifetime. It is a rule recognized in most countries that a person who accepts the hospitality of an alms-house must sacrifice the privilege of ordinary Christain burial.

In the United States the existing laws would not permit the establishment of a factory for bleaching and preparing human skeletons. The bodies of criminals and paupers may find their way to the dissecting rooms of medical colleges, but it is required that eventually they shall be accounted for and buried. But in Europe this matter is regarded from a different point of view, and the manufacture of skeletons of men, women and children for the market is regularly conducted in Berlin and Vienna as well as in Paris. Thus it happens that the human skeletons required by scientific institutions in this country are imported from abroad. The only sort of skeleton produced here is of the family type, which is kept in the closet.

To supply the demand in this country, about 1,500 skeletons are imported annually. This reckoning does not include minor parts, such as skulls and thigh-bones. These are in great request by secret societies, being absolutely indispensable for initiatory ceremonies. One may purchase a cranium and cross-bones for only $10. But if you want something really fancy in the way of a skull, you must pay $40. It is worth the money, however, being beautifully disarticulated, so that each particular bone may be studied separately, including even the little bones of the ear. The lower jaw can be detached, and this feature is calculated to excite pleasant thoughts in the mind of a man who has a mother-in-law.

You can buy a very good skeleton complete for $40. A plain skull costs only $6. By students of obstetrics there is a special demand for the pelvis, which comes at $7. Clubs organized to defy superstitious beliefs affect the use of skulls for drinking-cups, and young men who are studying for the medical profession indulge a ghastly humor by employing similar receptacles to hold tobacco. The demand for human bones always exceeds the supply. It is said that the finest work ever bestowed on a skeleton may be seen in that used by the magician Herrmann, though he will not permit anybody to examine it.

The first operation in preparing a skeleton after the Parisian method is to remove the flesh by means of the knife. Then the bones are boiled, after which they are scraped and bleached in the sun. It is said that the French secure the dazzling whiteness which marks their work in this line by treating the bones with ether and benzine. Finally, the bones pass into the "finishing room," where they are assorted. Many skeletons being cleaned at once, the bones are more or less mixed up, and a single skeleton as sold may consist of fragments of a number of individuals. A female skeleton is worth several francs more than that of a male.

The disarticulation of skulls is performed separately in the factory, as it is a branch requiring greater skill and nicety of manipulation. With the crania of young adults or children it is effected by the ingenious plan of filling the emptied skull-cavity with dried peas, which are then steeped in water and in swelling compel the disjunction more delicately than would be possible in any other way. The skeletons of infants are treated by themselves. A distinct branch of the business has to do with the preparation of skeletons of various animals for the use of natural history students. These are sold to schools and colleges. Lizards, snakes, frogs, and other reptiles and batrachians require special care on account of the delicacy of their bony structure.

Wars are apt to have a depressing effect on the market for human bones. For some time after the conflict between Russia and Turkey the cheapness and abundance of the skeleton supply injured the trade somewhat. Great quantities of bones were collected on the battlefields which marked the history of that memorable struggle. Conquerors of old did not take the trouble to bury the people slaughtered along their lines of march, but left behind them hundreds of thousands of bleaching skeletons, which were gathered years afterwards and piled in pyramids that were soon wasted away by the winds and storms. After the battle of Morgarten the Swiss made such a pyramid of the bones of the soldiers of Charles the Rash left on the field.

The writer begs leave to quote an essayist in the San Francisco *Chronicle*, who states that in the process of cremation the flesh tissues disappear, and there is left a residue composed of pieces of bone of various sizes, which, if water is added and they are dried, become a coarse dust that may be hermetically sealed in an urn and preserved for an indefinite period. In Paris, the bones of the dead have been removed year after year from the cemeteries to the catacombs, until the number of skeletons assembled, more or less complete, amounts to 6,000,000. Bones of saints are scattered all over Europe. There are twenty jaw-bones of John the Baptist alone, and nine of St. Bartholomew's hands are well known. The most extensive collection of osseous relics is that of the 11,000 virgins in the church of St. Ursula at Cologne, each separate bone of which is presumed to be capable of performing a miracle.

The ordinary bone-boiling industry, so vehemently discountenanced by residents in the neighborhood of factories engaged in the business, has a wide commercial importance. The shins, thighs and forelegs of cattle and sheep are cleaned at these establishments and turned over to manufacturers who make them up into knife-handles, tooth-brushes, collar-buttons, "ivory" sleeve buttons, umbrella-handles, hair-brushes, and combs. Great quantities of the thigh-bones, which furnish the best material, are exported to Europe and brought back to this country in manufactured shape. The ribs and skulls are used for making bone-black, which is employed chiefly in sugar refineries. The marrow of the bones yields the "bear's grease" of commerce.

Skeletons of animals reach the National Museum in the rough—that is to say, with part of the flesh still adhering They come from all parts of the world. The small skeletons are simply soaked in water, scraped and bleached in the sun. Those of larger animals are soaked until the flesh is rotted. Then they are taken out and steeped in hot washing-soda, after which they are scrubbed with brushes. Next they are put into a weak solution of chloride of lime, to bleach and deodorize them. Finally, they are spread out in the sun to whiten before putting the bones together and setting up the finished skeletons.

HOW LAGER BEER IS MADE.

Now, gentle reader, to start at beginning. Here is a large room with a stone floor, and in one corner a huge iron tank. Into this tank the raw barley is thrown and steeped in hot water for twenty-four hours. It is then spread over the floor in heaps, and men are kept turning it continually with wooden shovels. As soon as the germ develops and just before the leaf is ready to burst out, it is shoveled into an elevator, by which it is taken to the drying room.

This is the drying room. You see the floor is made of wire netting with fine meshes. Just under this are furnaces, and in the center of the square ceiling arises a square tower through which the steam and hot air escapes. This is the square tower seen on every brewery where they make their own malt. It is necessary that the malt be dried in order that it may not sour, as it is only made during the winter season, and enough must be stored for summer use. The process of malting develops a ferment in the barley, called distaste, which has the power of changing starch into sugar. The dry malt has a pleasant taste, and you had better fill your pockets for future munching.

The next scene is a hot furnace room containing several huge mash kettles. These are of copper surrounded by steam jackets through which steam is introduced for heating. Here the brewing takes place. Malt is put into kettles with pure hydrant water, and kept at a temperature of 120 deg. for a few hours. Here the so-called adulteration is introduced. In the process of malting, more distaste is developed than is necessary for the conversion of the starch contained in the barley, and as it will convert much additional starch, raw starch, rice and raw cereals containing the substance are here mixed with the malt. As all starch is the same, and as it is all converted into the same kind of sugar, there is no reason why the use of these materials is not perfectly right. The popular idea that poisonous compounds, canal water, etc., are used is all a mistake. Great cleanliness is observed throughout the whole brewery, and on that score there is nothing cleaner than beer. When the brewing process has continued the proper length of time (which must be learned by long practice), the liquid is turned into the tubs having double bottoms, the upper of which is perforated copper and serves to strain all the malt from the liquid which now has a pleasant sweet taste. After being strained, it is pumped back into the mash kettle and the hops are added. Before it was almost white; now, the yellowish tinge is imparted to it, along with the bitter taste. The hops used come from California, Washington and New York, in America, and Bavaria and Bohemia, in Europe. The European hops have a much stronger flavor than the American ones.

Now this is the first cooling room. The beer is brewed, but contains no alcohol, that is, it is unfermented. A large pan forty feet square and and eight inches deep receives the strength fluid from the tubs where the hops are strained out. It is pumped into this pan at one end, and passes out as rapidly at the other, the object being to expose to a large surface for evaporation and lowering the temperature slightly before the more rapid cooling is given it.

Just below the pan in another room are a series of copper pipes placed horizontally, one on top of the other, somewhat in the manner of a huge steam heater. Through the upper rows of these pipes cold water is run, through the lower ones a freezing mixture of brine. The beer is allowed to trickle down the outside of these pipes, and by the time it reaches the pan at the bottom has been lowered to 40° Fahr.

It is now ready for fermentation and disappears into the cellar through a copper pipe. Now we enter the shipping department. Here are wagons bringing in empty kegs and hauling off full ones. An empty keg is partially filled with water, placed on a machine where it is rotated rapidly against a large brush, while a stream of water is kept playing over it. From here it is taken to a machine which rinses it alternately with hot and cold water. A lighted taper is then introduced, while the interior is examined to see if any pitching is needed. Thus tested they are ready for use again.

The furnaces make this room uncomfortably warm, but button up your coat, for you will soon freeze. Yes, this is a miniature Iceland. If Milton's vivid description of hades is accurate, the habit of temperance people of applying that term to breweries is very appropriate, for here one is hurried from fiery heat to icy cold in a minute.

The cellar is forty feet deep and dark as a coal mine. The feeble rays from the candles glance over casks of beer and pierce endless galleries which remind one of the old dungeons of the Middle Ages. Under two whole blocks this subterranean storehouse extends. From the stone arches here and there project long stalactites, while the pipes which conduct the freezing mixture are only two inches in diameter, but coat upon coat of frost has accumulated until they look to be a foot in diameter. Every joint, every screw is faithfully enlarged. The piercing cold prevents from getting too imaginative, however. Let us see what is here, and get out.

This beer from the cooling apparatus is received into large open wooden vats, where the fermentation takes place, occupying about fourteen days. It is then stored in air-tight tubs and allowed to stand, in well regulated breweries, for six months. There is no fermentation about it during this stage.

Sometimes before being put on the market it is transferred to heavy casks, and some fresh, unfermented beer is mixed with it in order to make it foam. The foam is produced by the generation of carbonic acid gas. As the casks are entirely filled, there is no room for foam, but an enormous pressure is exerted on the sides of the cask by the gas with which the whole mass is charged.

From these casks the kegs are filled. Now it is evident that, were the beer simply drawn off, the kegs would be filled with foam, but this obstacle is done away with in a very nice manner. When it is desired to tap a cask, a hose is attached to the top bunghole and another to the faucet. Through the first, compressed air is pumped into the cask, and the beer is forced into the kegs without a particle of foam. The men who work in this region of ice dress the same the year round, as they are independent of the weather department.

This low temperature may be produced in two ways—by direct expansion, that is, by forcing ammonia gas through the pipes, or by passing chilled brine through them.

The wages of brewers range from $60 to $100 per month, and as there is no trade to be learned except in a few departments, it is a very good business for a man who is required to do manual labor for his sustenance. About 1,500 men are engaged in the breweries of this city.—*American Bottler.*

EXPLOSIVE MIXTURES.

Potassium Chlorate.—*The British Druggist* says: This is probably more often the cause of explosion than any other chemical which is handled by pharmacists. It should never be mixed in the powdered state with organic substances; even in very small traces in "saline" it is apt, after a time, if all the ingredients and the containing bottle are not absolutely dry, to burst the bottle and violently scatter the contents. It should never be mixed dry with tannin. Occasionally a gargle is ordered containing these ingredients; they should always be dissolved separately. Hypophosphites and chlorate similarly explode when mixed in the dry state. Chlorate of potassium and glycerin alone should never be dispensed, nor should it be combined with sulphur or the metallic sulphides.

Permanganate of potassium is another source of danger, for the same reason as chlorate—it so readily gives up its oxygen; consequently, it should not be mixed with any organic bodies, such as sugar or glycerin, nor with spirit of wine or spirituous preparations. When ordered in form of pills, it should be massed with kaolin and and petrolatum.

Glycerin, in addition to the cases above mentioned, should not be combined with chromic acid; nor with borax together with alkaline carbonates.

Turpentines and volatile oils containing terpenes should not be combined with strong mineral acids, nor with iodine or bromine.

Iodine should never be mixed in the free state with any preparations containing free ammonia, especially when combined with fatty matter.

Oxide of silver, sometimes ordered in the pipular form, should be massed with kaolin and petrolatum, and no chloride combined with it.

Spirit of nitrous ether frequently becomes very acid in keeping; in this state, when mixed with carbonates or bicarbonates, it liberates carbonic anhydride, and, if tightly corked, the bottle is frequently burst. Such a mixture should not be corked immediately after mixing. Excess of acid in the niter may be removed by keeping a large crystal of sodium bicarbonate in the stock bottle, occasionally easing the stopper.

◆

It is easier to get money out of most men by false pretences than by a true tale of woe; not that most men are unfeeling, but because you are being cheated you are at the same time being flattered by the knave who is cheating you; and, say what you will, flattery is sweet.

This is the cheerful sign that hangs against a weather-beaten boathouse on the Massachusettes shore:

"Boats to let by the hour or day; fishing-tackle, angle worms and eels for bait; sandwiches and rolls for sale."

And the proprietor wonders that he does not sell more lunches to the parties who hire his boats.

THE MOON.

BY LEWIS SWIFT.

The most glorious object on which the eye of man ever rested is the sun, after which comes the moon when shining with a full, round face. It is difficult, indeed, to conceive that an object of such brilliancy is, in reality, a dark one, in itself as devoid of light as is the earth at midnight in the absence of the moon. Moonlight is simply sunlight received second hand, the light of the sun being reflected from the moon's dark surface. This is true of all the planets also, though not of stars, as they all are suns self-shining as our own, a fact previously given.

If to behold the full moon is a spectacle so inspiring, her crescent with its horns pointing either to the right or left, or, again, upward as she nears the setting sun, is hardly less so, and in this place demands special attention, as, from long experience, I find the cause of her assumption of the crescent, the half and the gibbous phases to be very imperfectly understood, it being often imagined, even, that some dark body passes between the earth and the moon, and cuts off her light wholly or in part, and suggests the question often asked of me, "What is the object which thus intervenes?" Of all the countless host of stars, comets and planets, the moon is nearest to the earth, and, consequently, it is not possible for any other body to come between her and the earth.

The moon's easterly motion is about thirteen degrees daily, and her complete revolution around the earth occupies about 273 days, but as during this time the sun has moved also easterly one degree per day, the moon, to overtake the sun and produce a new moon, has to make more than a complete revolution This requires a little more than two days, so that from new moon to new again is not 27⅓, but 29½ days, the length of a lunar month. The instant of the new moon is when the moon passes the sun, her illumined side being, of course, wholly turned toward that luminary, and her dark and, consequently, invisible side toward the earth. As she emerges from the sun a constantly increasing portion of her sunny side turns towards us, and we see her first as a slender crescent which nightly grows in size until after the lapse of a little more than seven days after passing the sun she appears as a half moon, one-half of her sunny side being turned toward us, or, as the almanacs say, at first quarter. Nightly, more and more of her bright disk presents itself until, rising when the sun sets, her entire luminous portion is turned to us as well as to the sun, and we see her as the full-orbed moon. Then, in reverse order, the above changes are gone through until a fortnight has elapsed, when she again passes the sun and becomes invisible.

Although the full moon in a cloudless sky floods the earth with radiance and splendor and invests even the most unlovely objects with a softened beauty, yet it would require more than six hundred thousand moons shining at once to equal the light of the sun.

It is a curious and an unexplained fact, and probably not an exceptional case in the solar system, that the moon revolves round the earth in exactly the same time required to rotate on her axis, thus forever preventing her posterior hemisphere from being seen, and, therefore, we are and must remain ignorant regarding the typography and scenery of the opposite side.

The inhabitability of the moon has in every age been a fruitful theme for reflection and discussion, but the invention of the telescope has settled the question in the negative. As it is a world entirely destitute of an atmosphere, as it has no water, not a drop, and as its days and nights are each equal to two of our earth-weeks, and as, furthermore, no change has been observed since it became an object of telescopic study, we are forced to the conclusion that it cannot be the home of sentiment beings and that it cannot sustain life of any sort. Are we then justified in the belief that this heavenly body has been created in vain? No; we owe much to the moon. She raises the ocean tides, and their ebb and flow serve to keep the waters of the gulfs, bays and estuaries of the earth from growing stagnant. And to sailors at sea she is of great service in determining positions.

The moon as a telescope object surpasses in magnificence all others in the heavens. On favorable occasions she can approach to less than 220,000 miles from the earth, or, from surface to surface, to within 215,000 miles. If at such a time a magnifying power of, say, two thousand be applied, she will be seen as though at a distance of over 100 miles. Under these conditions, an object as large as the Capital at Washington could be seen as a visible point.

It is not possible for any telescope ever to do better than that. The idea impromulgated by sensational writers regarding the giant telescopes that must, when completed, bring the moon to within a few miles or even to a distance of a few yards is wholly erroneous. To see the moon well there is no need of a mammoth telescope, as she has sufficient light to bear a high power, yet our atmosphere is so laden with vapors and lashed with tremors which are magnified as much as is the moon itself, that the close investigation ardently desired by astronomers is prevented thereby, and only low magnifying powers can be used. But the lunar scenery even under these not most favorable conditions is grand beyond the power of words to express. The great telescope of the Lowe Observatory with its incomparable eyepiece, specially adapted for the work, will reveal her mountain heights and craterous depths, her yawning canyons and dry ocean beds, where when the moon was young, tides ebbed and flowed.—*Mount Lowe Echo.*

MISCELLANEOUS.

COLD STORAGE CATS.

A Pittsburg daily prints a truly remarkable story which is well worthy of comment. According to the yarn, when the cold storage warehouses in that city were first opened, the rats were driven away because they were unable to exist in the freezing atmosphere of the storage chambers. It was soon found out, according to our enterprising Pittsburg contemporary, that the rat is an animal of remarkable adaptability. Recently a large number of rats were captured in the Polarian rooms. They were found (we now quote our Pittsburg contemporary) to be clothed in wonderfully long and thick fur, even their tapering snakelike tails being covered by a thick growth of hair. Cats whose coats have adapted themselves to the conditions under which they live have domesticated themselves in all the storage warehouses in Pittsburg.

There was nothing left for the Pittsburg cold storage people but to breed a race of cats which would catch this new fangled race of rats. Our Pittsburg contemporary goes on to tell how "One cat was finally introduced into the rooms of the Pennsylvania Storage Company which was able to stand the cold temperature. She was a cat of unusually thick fur, and she thrived and grew fat in quarters where the temperature was belew 30 degrees. By careful nursing, a brood of seven kittens was developed in this warehouse into sturdy, thick-furred cats that love an Icelander clime. They have been distributed among the other cold storage houses of Pittsburg, and have created a peculiar breed of cats, adapted to the conditions under which they must exist to find their prey. These cats are short-tailed, chuby pussies, with hair as thick and full of underfur as the wild cats of the Canadian woods. One remarkable thing about them is the development of their "feelers." Those long stiff hairs that protrude from a cat's nose and eyebrows, are, in the ordinary feline, about three inches long. In the cats cultivated in the cold warehouses the "feelers" grow to a length of five and six inches."

We commend this matter to the attention of our many readers who operate cold storage rooms and may discover some of the dauntless new fangled rats described by our Pittsburg contemporary. They might then write to the Pittsburg concern which is breeding the race of cats especially adapted for rat catching in the cold storage business.

AN INGENIOUS CARD INDEX FOR REFERENCE.

The card system of indexing and filing consists simply of a series of cards, ruled or unruled, arranged consecutively, alphabetically, or by numbers, or by subjects, or on any other plan.

These cards are filed on edge, in a box or tray, and, as bulk increases, in drawers contained in cases.

It is always up to date, completely and self-indexed, and always in order. New cards can be inserted in their proper place and sequence at any time. Obsolete cards can be taken out. It is therefore indefinitely expansible and never becomes antiquated or out of date.

One entry, with as many cross references as may be desired, is sufficient, and a single reference takes the place of a long, tedious, and often futile search through pages of manuscript and type.

There is no copying and recopying, no indexing, no waste of material, time, or labor. One main entry suffices. The index is always complete, never half-full, never over-full, and never empty, but is always simple, compact, ready, and indefinitely expansible. It may comprise ten cards, a hundred cards, or as many thousand cards and items.

Originally introduced as a card index of authors and works for public and private library use, it has spread in its comprehensiveness and application to infinity. To science, especially, it is of the greatest benefit, and its use is spreading with growing rapidity.

Each item being on a seperate card, the whole may be arranged and re-arranged over and over again by simply sorting into the new order desired.

Several points are of importance:—The cards must be uniform in size, with a square sharp corner. It is difficult to separate a high card from a low one, and equally difficult to catch a rounded corner. Cards cut with a die or on a paper-cutter vary in size, and the only sure and accurate method is by the use of the card shears.

Two titles may be used, but they must always occupy the same relative position from the upper margin of the card. These titles may refer respectively to the general subject and the special item under that subject. The special card takes its index heading in the upper right-hand corner, the general subject being at the left but on the same line.

The body of the card contains a concise, but yet brief amount of subject matter, with as many cross references as desired, referring to important index matter contained therein, said index cross references to be filled in their proper places relatively and consecutively in the general index.

Where the notes are written, a simple index card will suffice for cross reference, but when printed it is preferable to reprint each note under its cross index, thus saving time in hunting the main card.

This in its simplest form is the card index,—a series of cards of exactly uniform size, with index titles and concise notes in uniform form and style.

Many aids have been added by experience. The most important of these is the guide card of heavy cardboard, to mark the location of special subjects and allow instant opening at the proper place by name, letter, or subject.

"Next in importance to having the cards legibly written and arranged in strict order is the insertion of frequent and legible guides. These mark location closely and enable the user to turn instantly to any desired name, topic, or number in the index." However large the index may be, a sufficient number of guides will "run down" the subject at sight. Pointing as they do both ways, they cannot be used too frequently. One cannot have too many.

Blocks at each end of the row give a proper slope for convenient handling of the cards. Formerly made of wood or zinc, these crude forms have been replaced by bristol cards, cut one-half em higher than the body cards, so as to present a projection above them one-fifth, one-half, or one-third, as desired.

Card locks and guard locks are not necessary to the private individual. The card lock especially wastes space, since the perforation at the bottom of the card uses up much available space.

There are many subjects which, however, would take too many cards, especially if cross-indexed, in full, if confined to the small card.

But the same system is applicable to another method. Briefly described it comprises a number of sheets of a uniform size, bound temporarily or permanently, in a set of slip covers. These sheets can be laced into the covers in any order and in as many numbers as may be desired.

The preferable size for a standard is eight by ten inches, the size of a circular letter. This sheet has five times the space available on the card suggested as standard, and is therefore preferable for articles of notes of any length, the card being used for shorter notes and references. A stout quality of paper should be used, and scraps may be pasted onto the loose sheets and afterward bound in order with the printed or written notes.

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Bromo Soda holds its own on its merit. For nervous headache and stomach headache, insomnia, brain tire, debility, vertigo and headache after taking opium, morphine, etc., it has but few equals if any superiors. And it is "so nice" to take and the effect is like magic in the majority of cases. It is one of the things one does not like to be without night or day.—*Army and Navy Magazine.*

And this leads us to add that Bromo Soda, as made by Wm. R. Warner & Co., is the only so-called "Bromo" preparation we know of which contains any bromine. EDITOR AM. ANALYST.

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THE ELECTRICAL AND STREET RAILWAY.—Under the new management of the veteran journalist a *St. Clair* presents many new and strong points of attraction. It occupies a splendid field in electrical journalism, and its future is replete with promise. Energy, enterprise and thrift are the personal characteristics of its management.

AT THE DRUGGIST'S COUNTER.

Customer: "Can you give me a dose for my little Polly? She seems a good deal out of sorts, has dry, parched lips, is off her feed, and appears to be generally run down." "Certainly," said the chemist, "I should recommend a tonic." The tonic was consequently agreed upon, and was handed over with the admonition, "Mind she takes it regularly—a tablespoonful at a time." "Oh," said the customer, "it's all very well to talk like that when you are dealing with a human being——." "But who on earth is it for, then?" asked the chemist; "I thought it was for your wife." "No-o-o-o, man; for my dog!"—*Chemist and Druggist.*

"Maria," said Mr. Billus, "that young man with the blond hair and pale moustache seems to be a good deal stuck on Bessie."

"I wish you wouldn't use coarse slang when you talk, John," replied Mrs. Billus.

"What is the young fellow's name?"

"His name is Leech."

"Maria," observed Mr. Billus after a thoughtful pause, "you see I wasn't talking slang."

WHAT'S IN A NAME?

Pancake is the somewhat singular name of a druggist in Ohio.—*Pharm. Era.*

Is he underdone?—*Exchange.*

Or turned?—*Exchange.*

Made with baking powder or emptyings?

It is said that if you eat prunes you will escape appendicitis. But is not a prune diet nearly as bad as appendicitis?

DIOVIBURNIA UTERINE, TONIC, ANTISPASMODIC AND ANODYN.

A reliable and trustworthy remedy for the relief of Dysmenorrhœa, Amenorrhœa, Menorrhagia, Leucorrhœa, Subinvolution, Threatened Abortion, Vomiting in Pregnancy and Chlorosis; directing its action to the uterine system as a general tonic and antispasmodic it is unexcelled.

FORMULA.—Every ounce represents 3-4 dram each of the fluid extracts: Viburnum Prunifolium, Viburnum Opulus, Dioscorea Villosa Aletris Farinosa, Helonias Dioica, Mitchella Repens, Caulophyllum Thalictroides, Scutellaria Lateriflora.

ST. LOUIS, MO., June 23, 1888.

I have used DIOVIBURNIA enough to satisfy myself of its merits. It is of unquestionable benefit in painful dysmenorrhœa; it possesses antispasmodic properties which seem to be exerted especially on the uterus.

Dr. H. Tuholske

Professor of Surgery, Post-Graduate School.

ST. LOUIS, MO., June 18, 1888.

have given DIOVIBURNIA a fair trial, and found it useful as an uterine tonic and antispasmodic, relieving the pains of dysmenorrhœa and a regulator of the entire uterine functions. I feel authorized to give this recomendation.

L. Ch. Boisliniere

Professor of Obstetrics, St. Louis Medical College.

ST. LOUIS, MO., June 18, 1888.

For more than a year I have prescribed DIOVIBURNIA. In those cases that I have been able to follow up, found that they derived much benefit from its use in almost every form of dysmenorrhœa—especially the conjestive form. I am so pleased with it that I now prescribe it almost daily.

T. L. Papin M. D.

Physician in Chief and Gynecologist to St. John's Hospital.

ST. LOUIS, MO., June 20, 1888.

I very cheerfully give my testimony to the virtues of a combination of vegetable remedies prepared by a well known and able pharmacist of this city and known as DIOVIBURNIA. I have employed this medicine in cases of dysmenorrhœa, suppression of the catamenia, and in excessive leucorrhœa, and have been much pleased with it. I do not think its claims (as set forth in the circular accompanying it) to be at all excessive.

Jno. P. Johnson

Professor of Principles and Practice of Medicine,
St. Louis Medical College.

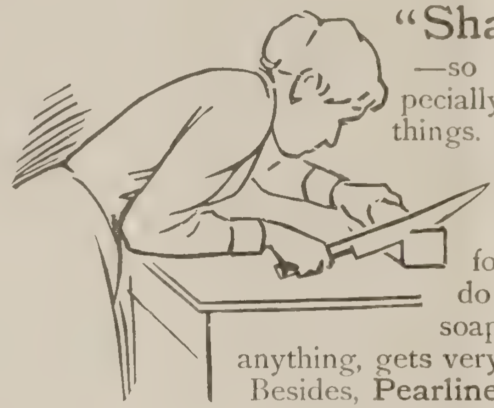
DOSE.—For adults, a dessertspoonful three times a day, after meals. In urgent cases, where there is much pain, dose may be given every hour or two, *always in hot water.* Put up in Eight Ounce Bottles.

To any Physician, unacquainted with the medicinal effect of Dioviburnia and Neurosine, we will mail pamphlets containing full information, suggestions, commendations of some of the most prominent professors in medicine and various methods of treatment. Or to those desiring to try Dioviburnia and Neurosine, and will pay express charges, we will send on application a trial bottle of each.

DIOS CHEMICAL COMPANY, ST. LOUIS, MO.

THE SECRET OF BEAUTY.

"Were beauty," as the adage affirms, "only skin deep," it would not be unreasonable to expect the remedying, by the multifarious lotions, soaps, ungents, ointments and washes offered to the credulous, of the various blemishes that commonly militate against its perfection. But, unhappily, their effectiveness is not even "skin deep," and experience demonstrates that where they do seem to have a slightly beneficial effect, it is but temporary and exceedingly apt to produce ultimate ill consequences much worse than the trivial disfigurement they were expected to correct. Sensible folks now realize that beauty, far from being merely superficial, is an external manifestation of deeply internal conditions and that it is inseparable from and truly an expression of perfect health. Unhealthful persons can not be beautiful. Nature may have bestowed upon them pleasing outlines of form, which cannot be entirely obliterated by any but the gravest forms of disease, but form is only one element of beauty and perhaps its least important factor. A smooth unblemished skin is an essential to beauty. The most perfect Grecian nose imaginable ceases to be beautiful when it bears a pimple; and a little pustule on an eyelid will completely destroy, while it lasts, the witchery of the finest eyes. But, Fair Ladies, pimples and pustules you are certain of having if you permit your blood to get into an impure condition. Lament them as you will, they are Nature's kindly warnings that continued neglect of your health will inevitably bring upon you worse afflictions. And the reason why your lotions and dauby stuffs cannot cure them is that such things cannot reach their cause, which is impurity of the blood. If a woman's skin bore the same relation to her insides that the cover of a book does to the printed pages it encloses, then there might be sense in her expecting to remove pimples, pustules, "moth patches," and other such disfigurements by steps analogous to those employed in repairing the damaged book cover. But her repairs must be made from within. A bottle of Ayer's Compound Extract of Sarsaparilla will do her more good than all the "skin beautifiers" and "complexion improvers" in the world could effect. It will cleanse her liver and kidneys and stimulate them to healthful action, put her organs of digestion and assimilation in condition to fill her veins with good blood, and waken her semi-torpid bowels to regular and adequate discharge of their functions. Does she doubt that she stands in need of such radical treatment? She cannot, if she reads aright Nature's message in those superficial disfigurements of which she complains. They proclaim existent necessity for just such aid as Ayer's Compound Extract of Sarsaparilla offers and nothing else will so promptly and thoroughly afford. Grave maladies, even involving death, are certainly consequent upon neglect of the disordered vital organs. This medicine is one which has the approval of the highest medical authorities; is commended by the personal experiences of millions during the half century in which it has continuously demonstrated, all over the world, its superiority over all other "alteratives"; is pleasant to take, safe and gentle in its operation, notwithstanding its potency, and can be implicitly relied upon as the most perfect blood purifier known to medical science. No less than six of its ingredients are recognized in the pharmacopea as the best alteratives afforded by the vegetable and mineral kingdoms, each having specially desirable effects upon particular organs, and, in combination, renovating and rejuvenating the system as no other medicine can. Ayer's Compound Extract of Sarsaparilla, in properly regulated doses, can be safely and beneficially administered to infants, and will have an almost magical effect in banishing the epidermal blemishes afflicting beauty, yet, at the same time, is so powerful that it extirpates the most virulent blood infections and obstinate taints of hereditary disease.



"Shave your Soap"—so the soap makers say, especially if you're washing delicate things. Now, in the name of common sense, what's the use? When you can get **Pearline**, in powder form for this very reason, why do you want to work over soap, which, if it's good for anything, gets very hard and difficult to cut. Besides, **Pearline** is vastly better than any powdered soap could be. It has all the good properties of any soap—and many more, too. There's something in it that does the work easily, but without harm—much more easily than any other way yet known.

Beware Peddlers and some unscrupulous grocers will tell you, "this is as good as" or "the same as Pearline." IT'S FALSE—Pearline is never peddled, if your grocer sends you an imitation, be honest—*send it back.* 392 JAMES PYLE, New York.

* * *

AMONG THE RHYMERS.

MUST ADVERTISE.

A man may guy,
And a man may lie,
And a man may puff and blow;
But he can't get trade
By sitting in the shade
Waiting for business to grow.

—*Exchange.*

She spoke both Greek and Latin tongue,
  She parley voud with joy,
But yet "dat ittle tiddie sing"
  She called her three-weeks boy.

Oh sing us a song of the fun in Coree,
Of the Kow Ching and Yang Tse Kiang,
Of Chen Yuen, Tien Tsin and Chin Quong Quie
And the barrels of beef in Hong Kong;
Of Black Flags and Foo Chow and Shanghai the great,
Of Tamsui, Amping and Kwang Tung,
Takao, Pekin and the minister Li,
Of Seik Wan, Naniwa and Kow Lung.
But let us all sing to the powers above
Of a faith that we'll never renounce,
Which is, that in English we always shall own
A language which all can pronounce.

—*Boston Budget.*

* * *

Nothing hurts a boy's feelings more than to act smart in front of a girl who is staying all night with his sister, and then get whipped for it in her presence.

The devil laughs when he sees a church member winking with one eye.

Example is more contagious than the smallpox.

The devil never has to go far to find a loafer.

Worry and the grave digger are good friends.

A hypocrite fools some, but none so badly as he does himself.

A fact is something that will keep going straight on forever.

A civil tongue is a better protection for the head than a steel helmet.

The man who goes out to meet trouble will have a short walk.

Going into politics has been the Jericho road on which many a man was robbed of the raiment of self-respect.

The man who has an appetite for glory will never get enough of it to make him fat.

Many are more concerned about what they will have for dinner than where they will spend eternity.—*Ram's Horn.*

"Yes," remarked the egg, "my theatrical venture was a success. I was cast for the villain and made a great hit."

* * *

There is more catarrh in this section of the country than all other diseases put together, and until the last few years was supposed to be incurable. For a great many years doctors pronounced it a local disease, and prescribed local remedies, and by constantly failing to cure with local treatment, pronounced it incurable. Science has proven catarrh to be a constitutional disease and therefore requires constitutional treatment. Hall's Catarrh Cure, manufactured by F. J. Cheney & Co., Toledo, O., is the only constitutional cure on the market. It is taken internally in doses from 10 drops to a teaspoonful. It acts directly on the blood and mucous surfaces of the system. They offer one hundred dollars for any case it fails to cure. Send for circulars and testimonials. Address,
F. J. CHENEY & CO., Toledo, O.
☞Sold by druggists, 75c.

HOW FELT HATS ARE MADE.

Saint Clement is called the patron saint of the hatters, not because he was the first man to wear a derby or broad brimmed straw, but for the reason that—so tradition has it—he unwittingly invented felt. And all derby hats are made of felt.

The good man, it seems, was about to set out on a pilgrimage to Jerusalem, as was the habit of the holy men of the early centuries, and, realizing that many dusty miles lay between him and his destination, he decided that he might as well make himself comfortable for the journey.

It was not good for a pilgrim to be comfortable, so the worthy man had to confine his endeavors to such places as would not be noticed by any other saint with whom he might come in contact. He decided to ease up on his feet, and accordingly placed a nice big pad of wool in each sandal.

When the pious pilgrm reached Jerusalem and removed his sandals he was surprised to find that his woolen padding, under the influence of constant heat, moisture and rubbing had become a tightly packed, strong and flexible mass. That was the first felt made. How Saint Clement spread abroad the knowledge of his discovery, or whether he went into the manufacture of hats, tradition does not tell.

In the first hats made the woolen felt was used, but today only a cheap grade is manufactured out of this substance, the felt made from the fur of the hare and the coney having taken its place. The hare's fur used in hat felt is obtained largely in Russia and Germany. The animals are raised there by the peasantry, not for the value of their skins, but for food. The skins, however, are saved and sold in small lots to dealers, who in turn sell to larger dealers, until the aggregation of the little pickings, made here and there over a wide territory, makes a great bulk of fur to be transformed yearly into hats. The skins of the coney are obtained in a like manner from France, Scotland and Australia.

The skins gathered, the first operation of the long series through which they are put before they are transformed into derbys, is the plucking from the coney skin and the shearing from the hares' skin of the hairs, which are always longer than the fur, and of no use.

Then the skins pass into the hands of the cutters, who operate in France, Germany, England and the United States. They first put them through a process called carrotting, rubbing with a chemical composition, one of the ingredients of which is nitrate of mercury. The effect of this is to give it the power of being worked, which it exhibits in the subsequent processes. It is next cut from the skin by machinery. In this state it is called "hatters' fur."

From the time it becomes hatters' fur until it is made into a hat it passes through many complicated operations, usually carried on by machines intricate in their mechanism, so that to describe in detail the whole process would require much space. It is possible, however, to give in brief a general idea of the operations which the fur undergoes in the making of a derby.

First it is "blown" or cleaned by means of a machine that forces through it a heavy draft of air, carrying out all the air and dirt, and leaving only the pure soft fur.

This fur is taken and weighed into portions of from two to three ounces, according to the weight of the hat to be made. Each of these portions is separately blown, almost hair by hair, upon a revolving brass cone, the apex of which is slightly rounded, and which has a perforated surface. A great suction is kept up through these perforations, and consequently the fur clings to the mould. These cones are from twenty-four to thirty inches deep.

The fur-covered mould is next carefully wrapped about with a cloth and dipped into hot water, which causes each particle of fur to cling to each other, so that the whole becomes a strong web that is easily removed from the brass cone. This is the original body of the hat.

The conical shaped body is next taken, and, under the influence of hot water, rolled, either by hand or in a machine, until the fur has become closer and closer packed and the whole length decreased to about eight inches, or in proportion to the size of the hat in course of construction. The operation is called sizing.

The body is then stiffened by a coating of shellac, dissolved either in alcohol or water, and applied with brushes. It is placed on another brass mould, and after having been softened with hot water is forced either by a machine or hand into the shape of a hat crown, the apex of the cone being rounded, and the base slightly bent out where the brim is to be made. When in this shape it is dyed.

Next the brim is flattened out straight, perpendicular to the axis of the original conical body. Then the whole is placed under great hydraulic pressure and the crown moulded into the correct shape, and the felt forced into a more compact condition and given a smooth, finished surface.

The last operation is the one of curling up the brim and trimming it and of placing the band upon the hat.

* * *

Edith—Only think! Charlie called me a dream! Wasn't that nice? Wonder what put that idea into his head?

Maude—Dreams are so ridiculous, you know.

* * *

"How did young Fitznoodle manage to catch such a stunning girl?"

"Why, I suppose he caught her with that stylish red-and-black trap he bought last week."

The A B C of Good Cooking.

a Always use Cottolene, the new shortening, for all cooking purposes. Good cooks who have tried it never go back to anything else.

B Better cooking, better food, better health is brought to any home by Cottolene. Will you have it in yours?

C Cottolene is a vegetable product, more healthful, appetizing and economical than any shortening known. Have you tried it?

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THE STANDARD OF EXCELLENCE FOR OVER FIFTY YEARS.

First Assistant Postmaster General, Frank H. Jones, sent the following matter to all postmasters, with orders to post the card containing it in their offices and call the attention of their patrons to it, that their mail could be returned.

"Don't mail your letter or valuable package without having your own address written or printed upon the left hand corner.

This will ensure its return to you if not delivered, and will prevent its being sent to and opened at the Dead Letter Office, Washington.

THE U. S. OFFICIAL POSTAL GUIDE warns us that over 5,000,000 pieces of mail matter go to the Dead Letter Office annually, containing many thousands of dollars; part can be returned to the senders and part cannot. If all letter writers would stick their *Printed Address* on their envelopes the Dead Letter Office at Washington could be abolished."

The above statement of the Post Office Department proves the great value of Gummed Addresses to every man, woman and youth who write letters. Think of it! Over 5,000,000 "dead letters" sent to the "Dead Letter Office" annually containing tens of thousands of dollars, etc., simply because the writers' addresses do not appear on the envelopes. This is a matter too important to be overlooked.

YOUR FULL ADDRESS Printed boldly on **1000** separate slips of postage stamp paper, 500 postpaid to you to stick on your **letters**, books, etc., and one each on **500 parcels of mail** from publishers, etc. to you, **no two alike**, together with our 16 page paper all for **10 cts.** Terms to agents, members of churches, schools, clubs, etc., 2 orders 18c.; 3, 25c.; 10, 60c.; 20 and over, 5c. each address. **O. I. C. U. R** going to order. We've nearly 200,000 customers already. Many from your town. **Your P. M.** can give you their names. THE HERALD, Test No. 48 B. Lum St., Phila., Pa.

THE DISTANCE OF THE STARS.

Sir Robert Ball, astronomer royal of England, recently delivered a lecture on the subject "The Other Worlds in Star Land," to a juvenile audience in the theatre of the Royal Dublin Society. In the course of his address he said: Were an electric wire wrapped seven or eight times as a girdle around this globe, the current would accomplish sexen or eight circuits in the intervals between two ticks of the pendulum of a clock. But now let us suppose that a telegraphic system is about to be instituted throughout the universe; let wires radiate from this earth, not alone to America or China, but let us imagine a wire from the earth to the moon, from the earth to the sun, and from the earth to some of the stars.

The moon is still so near us that the telegraphic message to our satellite would seem to pass almost instantaneously; it would not require much more than a single second of time. To the sun, however, the delay would be somewhat greater; in fact, you would have to wait nearly eight minutes. A message could not be sent to the sun and an answer received back in less than a quarter of an hour, in addition to delays of the ordinary kind. But now suppose that we are to send a message to one of the nearest of the stars.

As the telegraph clerk made the signal it would speed along the celestial wire with the frightful pace of 200,000 miles a second; but yet, such is the journey that minutes and hours, aye, and even days and weeks will pass over and the message has not reached the goal. The weeks run into months, the months spread into a year, but two years, nay, even three years will be necessary before that signal arrives at its destination. Such would be the problem of telegraphing to the nearest star. But there are stars in the sky to which the telegraph, traveling with this almost inconceivable speed, could not convey its message until after the lapse of fifty years and of a hundred years.

There are stars so distant that were a telegraphic message sent to them at the time when William the Conqueror landed, 800 years ago, the message would not have yet arrived. There are stars so distant that if the glad tidings of the first Christmas at Bethlehem, 1,890 years ago, had been wired off at the time, the message would still be on its way. There are stars so distant that had the first man that ever set foot on this globe dispatched a telegraph message to announce his advent, the intelligence would not have yet reached its destination. There are certainly stars shining in the heaven above us so distant that that much vaunted telegram would require 1,000,000 years to communicate with them. Do you hesitate to accept these facts that I have described? Then know the astronomers on whose authority they are based are those who have devoted their lives to the study of the stars, and they have only had one object in the pursuit they have followed, and that is the discovery of the truth.

FISHING IN THE THOUSAND ISLANDS.

ON THE NEW YORK CENTRAL.

Fifty-six pages, beautifully illustrated, nine maps showing exact location of the fish; full information, with numerous accurate illustrations of tackle, etc., will be sent free, postpaid, to any address in the world, on receipt of five two-cent stamps, by George H. Daniels, General Passenger Agent, Grand Central Station, New York.

Interest is often another name for curiosity.

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SODA

— USEFUL IN —

Nervous Headache, Sleeplessness, Excessive Study, Acute Migraene, Nervous Debility, Mania, etc.

— DOSE —

A heaping teaspoonful in half a glass of water, to be repeated once after an interval of thirty minutes, if necessary.

It is claimed by prominent specialists in nervous diseases, that the Bromide Sodium is more acceptable to the stomach than the Bromide Potassium. An almost certain relief is obtained by the administration of this Effervescing Salt It is used with advantage in INDIGESTION, the DEPRESSION following alcoholic and other excesses, as well as NERVOUS HEADACHES. It affords speedy relief in MENTAL and PHYSICAL EXHAUSTION.

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ADULTERATION AND ADULTERATION.

Our venerable contemporary, the *Confectioners' Journal*, has again forgotten its manners and attempts to take us to task for complaining of the chairman of the Executive Committee of the National Confectioners' Association who reported that the Committee "did not regard paraffin as a harmful adulterant." We were justified in our complaint as has since been abundantly proven by the official statements of Dr. Cyrus Edson, one of the New York health commissioners. We claim that the voice of the Executive Committee is the voice of the Association, until they discountenance it. So far they have not done so. To divert attention from our just strictures, the *Confectioners' Journal* brings in, as a side issue, a matter which we brought up six months ago, and for reason of the uncalled for blackguardism of our contemporary and its clients dropped. That will not work. We are watching them and they will bear it.

HOUSEHOLD.

TESTED RECEIPTS.

Every receipt here given is original, has been practically tested by the AMERICAN ANALYST and is therefore confidently recommended.

CHILI SAUCE.

Fifty ripe tomatoes, twenty-five onions, twelve green peppers, one bunch celery; chop fine and add one and one-half gallons vinegar, three cups sugar, one tablespoonful each allspice, cloves, cinnamon, mace, two tablespoonfuls salt. Boil two and one-half hours. When cold seal in jars.

RIPE TOMATO SOY.

One peck tomatoes peeled and sliced, eight onions sliced thin, one cup salt. Let them stand twenty-four hours, drain off all liquor, and add two quarts vinegar, one tablespoonful each of ground mustard, ginger, cloves and allspice, and one-half tablespoonful cayenne pepper. Stew slowly two or three hours, and when nearly done add two pounds sugar and one ground white mustard seed. Seal in jars.

PICKLED ONIONS.

Small silver skinned onions, remove the outer skin, put them into brine that will float an egg for three days; bring vinegar to a boiling point, add a little mace and whole red peppers and pour hot over the onions, after they have been well drained from the brine.

PICKLED PEACHES.

Four pounds sugar, one pint vinegar to twelve pounds of fruit; put sugar and vinegar together and boil, then add the fruit and let it come to a boil. The next day strain off the liquor and boil again. Do this three times and your pickles are delicious. Add cinnamon to the liquor and stick two or three cloves in each peach.

WATERMELON AND MUSKMELON PICKLE.

Cut the fruit into desired size, put in a stone jar and pour over enough scalding vinegar to cover. Heat the vinegar three successive days, pour over fruit. Weigh the fruit, and to every five pounds add three pounds sugar (white), one quart vinegar, cloves, cinnamon and allspice to suit. Boil all together until fruit is tender, put in jars, boil down the syrup until there is just enough to cover, and pour over scalding hot.

SWEET PICKLES.

To five hundred small cucumbers take three quarts cider vinegar, add two ounces each of cinnamon, allspice and cloves, three pounds light brown sugar, and a few small red peppers. Let the pickles stand over night in salt and water, then put in cold vinegar, and let them come to a boil, and boil two or three minutes. If the vinegar is too strong add one quart water.

SPICED PEACHES.

Five pounds peaches, two of brown sugar, one quart vinegar, one ounce each of cinnamon, cloves and mace. Wipe the peaches and boil until done in the vinegar and sugar, then take out, put in spices, boil well, pour over fruit.

BRANDIED PEACHES.

Put the peaches in boiling for a few minutes when the skin will easily peal. Make a syrup of half a pound of sugar and half a teacup of water to every pound of fruit. Skin as the skum rises in boiling, then put in the peaches and boil them gently until tender. Take them out carefully and fill jars. Remove the syrup from the fire, and add to it half a pint of best brandy to every pound of peaches.

OLEOMARGARINE.

The use of oleomargarine as a butter substitute has been practiced for many years. The oleomargarine law, which imposes a tax of two cents a pound on the manufactured product, has not helped to restrict its use, but has rather increased it, by giving to the consumer a guarantee of purity. The amount of tax collected on manufactured oleomargarine for the fiscal year ending June 30th, 1892, was $945,675, which shows that there were 47,283,750 pounds of oleomargarine manufactured in the United States in twelve months.

There can be no reasonable objection to the use of oleomargarine; it is clean, wholesome and digestible. When it is to be kept for a long time before use, as on shipboard or in distant mining camps, it is preferable to butter, because it has but little tendency to become rancid.—H. W. Wiley, *Gov. Chemist.*

Here is an article that, when cleanly made, is far superior to the average country butter. Every cent of tax on it, nearly one million dollars a year, comes out of the pockets of the working men, men who can ill-afford to pay it. This tax does not prevent the making nor using of oleomargarine, as it was intended. It is an outrageous imposition on the poor people of the Nation and the law creating this tax should be repealed. *—Indiana Pharmacist.*

CHINESE DELICACIES.

In the Chinese restaurant in Canton enough dog stew may be purchased to feed a lot of Coolies for ten cents. This is black dog stew, which is better than that made from yellow dog. It is cooked with a tuft of the hair left on the end of the tail as an evidence of good faith. Cat meat is higher than dog meat and rat meat costs less, but tabbies are killed only on order.—*Phila. Record.*

NOTHING IS WASTED IN PARIS.

Even the smallest scrap of paper, that which every one throws away, here becomes a source of profit. Old provision tins, for instance, are full of money; the lead soldering is removed and melted down into cakes, while the tin goes to make children's toys. Old boots, however bad, always contain in the arch of the foot at least one sound piece that will serve again, and generally there are two or three others in the sole, the heel and the back. Scraps of paper go to the cardboard factory, orange peel to the marmalade maker, and so on. The ideas suggested are not always agreeable, and to see a ragpicker fishing orange peel out of a basket is enough to make one forswear marmalade; but there is worse than that. The most valuable refuse—that which fetches two francs the kilo—is hair; the long goes to the hair dresser, while the short is used, among other things, for clarifying oils.

HYGIENIC.

AN INDISPENSABLE ADJUNCT.

The question is often raised to what extent we should make use of salt with our food.

In all ordinary cases, at least, the matter may be left to the individual appetite. Any slight excess of salt is easily cared for by the system, while a craving for a small amount with the food is perfectly normal, and under no circumstances harmful.

Indeed, although we take at all times more salt for seasoning than is absolutely needed in the body, such is the necessity of its presence that food prepared without salt is hardly to be considered nutritious.

Common salt—sodium chloride—is, perhaps, on the whole, one of the most important inorganic substances in the body; so important, in fact, that it can be said that there are no tissues or fluids in the body in which it does not occur. The average human body contains from eight to ten ounces.

The part which salt plays in the human economy is in dissolving much of the nutrition which is supplied to the body, and facilitating its absorption and distribution to the tissues.

The connection between the action of salt and that of the various tissues and fluids is so intimate, in other words, the presence of salt is so necessary to the vitality of various parts of the body, that life would soon come to an end if it were withdrawn entirely.

A substance to which so much influence is ascribed might naturally be supposed to have some virtue as a medicine. Such virtue has at different times been attributed to it by some authorities.

For example, it was supposed, since the acid in the gastric juice was found to be derived from sodium chloride, that the addition of a greater supply of common salt would be of benefit in cases of indigestion due to a weakened state of the gastric juice. But experiment showed that an increased supply of salt taken with the food was eliminated from the system, instead of being used to form the desired digestive acid.

On the whole, then, we may regard salt as an indispensable adjunct to food, but not as a substance possessing any peculiar medicinal properties.—*Youth's Companion.*

NASTY AND DANGEROUS.

A couple of years ago we called attention to the danger and nastiness of putting money coin in the mouth. A few days ago we witnessed another exhibition of this filthy habit. We were in the street car going to the capitol. At the Savery House a colored man got in going east also. He was no sooner seated than he pulled from his pocket a nickel and placed it between his teeth and kept it there until the car nearly reached the bridge. As he held it in his mouth the saliva spread over it and his lips would occasionally protrude and hide it from view—then recede and the nickel could be readily seen. This "hide-and-seek" arrangement kept up until the conductor reached him when, without wiping or cleaning it in any way, it was transferred to his hand and into his pocket. It is possible the next person getting into the car may have been a lady and she became the possessor of the nickel. It may have gone to her mouth also—for we have often seen ladies put coin into their mouth on the street car.

Now the first party may not have had any disease about his mouth, may not even have been chewing tobacco, and no harm come to the fair mouth to which it was next transferred. Still there is something repulsive in the thought and more in the practice. But oh, if the first party had had some loathsome infectious disease how serious the result might have been! No mouth, especially a lady's mouth, was ever intended as a substitute for a porte-monnaie and should not be put to such vile purposes.

SUGAR AS A PROMOTER OF MUSCULAR POWER.

The subject of sugar as a food producing muscular power has been discussed by Dr. Vaughn Harley. During a twenty-four hours' fast, on one day, water alone was drunk; on another 500 grammes of sugar were taken in an equal quantity of water. It was found that the sugar not only prolonged the time before fatigue occurred, but caused an increase of 66 to 76 per cent in the muscular work done. In the next place, the effect of sugar added to the meals was investigated. The muscle energy producing effect of sugar was found to be so great that 200 grammes added to a small meal increased the total amount of work done from 6 to 30 per cent. Sugar (250 grammes—about eight ounces) was now added to large mixed meal, when it was found not only to increase the amount of work done from eight to 16 per cent but increased the resistance against fatigue. As a concluding experiment, 250 grammes of sugar were added to the meals of a full diet day, causing the work done during the period of eight hours to be increased 22 to 36 per cent.

EARLY RISING.

More nonsense is talked about getting up early than probably any other subject. The proper time to get up is when the sleeper is rested—neither before nor after.

There is no more virtue in the air between six and eight than between eight and ten A. M. Of course if anyone goes to bed at half-past nine at night, he does not want to rise so late as half-past nine the next day. Eight hours' sleep is, as a rule, sufficient for the hardest worker.

The safest sleeping rules are to leave the bedroom window open two inches at the top in mild weather, for the purpose of ventilation, and to get up as soon as the first good wake comes.

After from six to eight hours' rest the average man and woman becomes restless. The brain regains its energy, sleep is broken, and for all practical purposes the night's rest is over. This is the time to rise, and for a man to take, if he can stand it, a cold bath, commencing the work of the world again with the finest and healthiest stimulant which he can enjoy.—*Sel.*

Many a gifted preacher can find time to read a new book every week, who couldn't find the parable of the prodigal son without a concordance.

MEDICAL.

WHAT IS A POISON?

BY ALBERT N. DOERSCHUK, PH. G., KANSAS CITY, MO.

[Read before the Missouri Pharmaceutical Association.]

One of the remnants of the dark ages to which many people of the present day still cling with great tenacity is the use of the word *poison* in designating such substances as arsenic, strychnine, corrosive sublimate, and many others that cause serious effects when absorbed by the human system in comparatively small quantities.

The English language affords scarcely a word that has caused so much diversity of opinion respecting its real meaning as has this word "poison." As might be expected, the views on this subject maintained by medical men differ greatly from those held by the laity. Quite as marked, however, are the differences of opinion prevailing among the professional men themselves. In courts of law, for instance, the defendant in cases of murder by poison have been known to escape on technical grounds arising from wrangles among medical witnesses as to what really constitutes a poison. In law an adequate definition of this word is scarcely ever prescribed for the guidance of authorities, and many have been the inconveniences, not to say difficulties, arising on this account.

All persons have well fixed individual opinions as to whether this or that substance is poisonous, but the fact that the same substance can be turned to value and use in its proper relation to man does not seem to bear much weight with them. Thus, certain people are very fond of mushrooms and know full well that the genuine article cannot possibly be injurious, while others insist this fungous growth is poisonous under all circumstances, and would not think of touching it, even though it is a nourishing food in constant use. In some localities people eat pokeberry pie and think no more of it than of drinking water, while in other places these berries are supposed to be fraught with all manner of poisonous principles, and their proximity is dreaded. The general prevalence of the impression that substances like arsenic and strychnine are deadly poisons under all circumstances further illustrates how firmly the masses hold to such unwarrantable prejudices. Many people hold up their hands in holy horror when they learn that their physician has prescribed these medicinal agents for them.

Two distinct schools have naturally developed among those who differ as to the correct meaning of this word "poison."

The one holds that a substance only becomes a poison when, by its innate chemical nature, it causes impairment or destruction of function.

The other asserts that only a certain fixed class of substances, such as hydrocyanic acid, corrosive sublimate, morphine and others that are capable of causing serious effects when absorbed by the human system in comparatively small quantities, can be termed poisons; and that drugs of this class possess certain native properties for the destruction of function not found in substances reputed inert.

The latter description, it would seem, is entirely too narrow and restricted. If we accept it as the logical definition then all those substances not included among the arbitrary poisons must, of course, be reported as innocuous—and many of those substances reputed inert operate in precisely the same manner as those termed virulent, when taken into the system in unusual quantities. For example, opium, when absorbed in the system in overdoses, causes death for the reason that it then becomes a narcotic poison; strychnine, because it becomes a narcotico-irritant, and arsenic an irritant poison. Now the mode of operation of one-half pound of common salt when taken into the stomach is precisely the same as that of five grains of arsenic. Both cause death for the reason that in the quantities mentioned they act as powerful irritants on the sentient extremities of the nerves of the lining membrane of the blood-vessel, thereby producing a fatal impression sympathethically upon the general nervous system. In this instance, why shrink from calling common salt a poison, simply because a much larger quantity of it than of arsenic is necessary to act fatally? Both these substances in the quantities mentioned operate in precisely the same manner, causing suspension of life by overcoming the vital forces. The natural conclusion is, therefore, that a substance is a poison in relation to man, in the actual sense of the word, only when by its innate chemical nature it causes impairment or destruction of function; and from this it must be decided that no substance can be called a poison *per se.*

Among medical men the following has generally been accepted as an authentic definition of this word "poison." It reads: "A poison is a substance capable of destroying life when taken internally or applied to the surface of the body, without acting as a purely mechanical irritant." This, however, is open to the same objection that it at once fixes a distinct class of substances as poisons under all circumstances.

The words "a deadly poison" form a phrase very generously abused in newspaper accounts of casualties by poisoning. Ammonia water, copperas, or salts of tartar are made to suffer under the same horrible epithet as the dangerous alkaloids or mercurials, when accidentally responsible for serious results. This term should be used only in describing those drugs that are poisonous in small quantities.

The old aphorism, "One man's food is another man's poison," is nicely illustrated in the fact that many valued articles of food, such as fish, oysters, rice, strawberries, cranberries, apples and many others, often cause a form of poisoning characterized by eruptions of the skin termed "uticaria," when ingested by certain persons who are incapable of properly assimilating these palate-pleasing foods.

When this word "poison" is considered in its more general significance, independently of its relation to harm, the fact of its being an indefinite relative word with only an approximate meaning is clearly demonstrated in the circumstance that certain species of birds satiate themselves with the berries of deadly nightshade, finding in them nourishment, the goats eat with impunity the leaves and pods of stramonium; so dangerous to man, this herb is to them, as it were, a rare and tempting delicacy.

HYDROPHOBIA, OR RABIES.

An accident having occurred to a little daughter of the writer, giving rise to much anxiety, and attended with serious danger, he feels impelled to present the following information in regard to this most terrible disease. The subject is one of such importance that he hopes that this information, in some form, may be published in every county paper in the United States for the further instruction of the laity, who seem to have some very erroneous views regarding it.

There is a genuine disease, known as rabies or hydrophobia. It is as distinct from mental influence as locomotor ataxia or any other recognized disease. It is a disease affecting especially the central nervous system, the brain and spinal chord. It is an infectious disease, always arising from inoculation of animals or man suffering from the disease. This being true, intelligent and determined efforts, extending over the entire country, would result in its final total extirpation. For this purpose, all unnecessary dogs or cats should be humanely put to death. All stray dogs or cats, having no responsible ownership, should also be put to death. All necessary ones should be properly tagged, for ready identification when necessary, and muzzled when required for safety. A high dog tax is one of the most beneficent forms of taxation ever proposed. It relieves the community to that extent from the necessity of other forms of taxation, and helps to eliminate surplus dogs. The owner will willingly pay the tax on those animals that are really useful, while those that are not worth the tax ought to be put out of the way.

The first symptom of the disease in a dog or other animal is a tendency to roam. Hence, every stray dog is a suspicious character and should be looked after. If he has not bitten any animal or person, and no owner be found for him, he should be killed. However, if he has bitten any person or animal, *he should not on any account be killed*, even although he is supposed to be mad. By thus killing him you remove the *only* certain means of diagnosis you have as to whether he was rabid or not, and, consequently, the *only* element of prognosis you have as to the likelihood of those bitten by him to develop the disease. The importance of this cannot be overestimated. Be not too quick with the gun or club. Capture the dog and chain or pen him up. If he has rabies he will soon distinctly show it, and will be dead within ten days. This will end the uncertainty, and all the animals bitten by him should be killed, and the persons bitten should be at once put under a specific treatment. If he proves not to be rabid, a great anxiety is relieved, and the wounds may be regarded as ordinary lacerated and punctured wounds.

Two points must especially be borne in mind: A rabid dog *seldom fears water*, and he *never has fits*. A rabid man cannot drink because of a severe spasm of the throat, and after a few painful attempts he acquires a fear or dread of water. A rabid animal on the other hand, seldom has these laryngeal spasms, and he loves water, as it helps to cool his intense thirst. As to the fits, dogs have many nervous disorders characterized by them, but they do not occur in rabies. They have occasional slight convulsive tremors, which cannot be called "fits," as ordinarily understood. A little courage, coolness and presence of mind will go a long way towards helping to determine any doubtful case.

The other well-known symptoms of madness will be observed: The animal shows a change of disposition, a tendency to eat strange things; tearing up clothing and wood; there is the peculiar hoarse "rabid" bark or howl, with extreme restlessness and irritability. Very soon after this follows the period of mansa, when he will rush with the fury of a demon at any animal or man he meets, with occasional momentary periods of abstraction, glaring into vacancy, then suddenly becoming furious again, even tearing at parts of his own body, a sticky saliva dripping from his mouth. This is followed shortly by the stage of paralysis, observed first in the hind legs and the lower jaw. This gradually progresses until it ends in death. The entire period, from the first signs of taking the disease, is usually about eight days, although it may be a much shorter time, the stage of paralysis coming on almost at once.

The poison may be conveyed by a lacerated bite, by a simple punctured bite, by forcible licking with the hard, rasping tongue, or by the saliva coming in direct contact with any raw surface of the skin or mucous membrane of the mouth, that would be sufficient to allow a vaccination to take.

The period of incubation in dogs may be as short as fifteen days, or as long as two hundred and forty days, but is usually from thirty to fifty days. *During this entire period the animal may communicate the disease by its saliva.* This is a very important fact, that is not very generally known. In man the period of incubation is usually from six to eight weeks, but it may (rarely) be as short as twenty days, or as long as one, or even two, years. The period is likely to be shorter in cases bitten about the face and neck, and in children.

The wound should be treated by abstracting the poison, and by cauterization. If on a limb, a ligature should be applied above the wound. The wound, if not too extensive, should be cut out. The abstraction of the poison should be done through cupping, or by sucking it out with the mouth (probably by the patient himself), rinsing the mouth each time with a strong solution of carbolic acid, or with strong vinegar, alcohol or other antiseptic fluid. The cauterization should be by nitrate of silver, by caustic potash or soda, or by a hot iron.

When the animal by which a person has been bitten is demonstrated to be actually rabid, the specific treatment elaborated by Pasteur should be entered upon at once.* The delay should be as short as possible, but never more than ten days.

This treatment consists of a series of injections of a preparation of rabic virus, beginning with a weak preparation and using a stronger and stronger one each day, until, at last, pure rabic virus is used. This treatment requires fifteen days. It is very successful, the percentage of mortality being about nil when the treatment is resorted to without delay

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*The Pasteur treatment is administered in this country at the Pasteur Institute, 97th street and 8th avenue, New York City.—*The Medical World.*

ANTIDOTE FOR PRUSSIC ACID.

Dr. Johann Antal, a chemist, and toxicologist of note, has reported to the Hungarian Society of Physicians that he has discovered a new chemical compound, the nitrate of cobalt, which, he says, is a most efficacious antidote to poisoning by cyanide of potassium or prussic acid. He tried the antidote first on animals, and afterwards on forty living persons who had been accidently poisoned with prussic acid. In not a single case did the antidote prove a failure.

REMOVAL OF WARTS.

R Hydrarg. bichlor............5 grains
Acid. salicyl ....1 drachm
Collodii ....1 ounce

This is applied every day, the upper crust of the previous application being removed before a fresh one is made. Usually after four applications the wart becomes so softened that gentle friction will remove it painlessly. If a further dressing is required, a five per cent salicylic-lanolin ointment is all that is necessary.—*Col. and Clinic Record.*

COFFEEISM.

The evil effects of coffee on many constitutions are matters well known. Many a case of persistent pruritus has been made to disappear by simply interdicting the use of coffee. On the other hand, coffee, taken without milk and with little sugar, exercises the most beneficial influence in many cases of migraine, especially if a little lemon or lime juice is added to the decoction. Some weeks before his death the late Prof. Charcott was in attendance upon a family composed of the father, mother and six children, who had become the victims of an uncontrollable mental irritability upon the least provocation. Hardly a meal passed at the family board without an explosion. Upon the least pretext the father became furious, the mother scolded and the children would give way to hysterical crying. The family were all hyperchondriacal. The strangest part of the history consisted in the fact that domestics employed and residing in the family would soon partake of the general cachexia and join in the pandamonium. In the middle ages, this house would have been considered haunted, and somebody would have been burned, or hung and quartered as having enchanted the premises. This was the nineteenth century, however, and as demons, goblins, fairies and vampires are no longer the fact, Charcott looked into the hygiene of the locality for a solution of the difficulties. On investigation he found that the father was a manufacturer and dealer in coffee; the roasting, grinding and packing, as well as the manufacturing of the essence and of the extract of coffee, being carried on in the lower floors of the premises. In the apartments above the odor of coffee permeated every nook; the furniture and clothing smelt strongly of coffee. The inmates were suffering from chronic coffeeism. A few weeks residence in the purer air of the sea shore and change of habitation soon brought about a change for the better.—*Pacific Medical Journal.*

TEA POISONING.

The influence of tea drinking upon the human organism, and especially its relation to insanity, is being investigated by the Commissioners appointed for this purpose in Ireland. The increase of insanity in that island suggested a relationship between it and the excessive consumption of tea. The Irish peasantry make a strong decoction of tea which is allowed to steep all day, and this with bread constitutes the three daily meals. The excess of tea causes a general debility of the nervous system and leads to a form of dyspepsia. The nervous unrest accompanied by insomnia frequently terminates in a permanent mental disorder. To tea drinking is also ascribed dental caries which is on the increase among the peasant and laboring classes. Hot solutions of tannin accompanied by bread cover the teeth and furnish a fertile culture medium for the various microbes.

INFECTIOUS DISEASES.

With the object of securing a more accurate nomenclature for the infectious and contagious diseases, the following classification is offered viz:

Infectious Diseases are due to the presence of their respective living microörganisms in the body.

Infectious Diseases are divisible into three classes: (1) Communicable; (2) Non-Communicable; (3) Septic.

(1) The *Communicable Diseases* are those whose origin is from an animal body—examples of which are smallpox, Asiatic cholera and tuberculosis. They may be sub-divided into two divisions according to the ordinary modes of their communication: (*a*) *Contagious;* (*b*) into the *Non-Contagious* Communicable disease. The contagious communicable diseases are those in which simple proximity to the sick is sufficient to communicate the infection—examples of which are scarlet fever, measles, smallpox, diphtheria, mumps, etc. Isolation of the sick in these cases is, therefore, needful to prevent infection. The non-contagious communicable diseases are those in which the communication is not by simple proximity to the sick, but through intermediate means of communication. Isolation of those sick with them, therefore, is neither needful nor effective in comparison with measures directed against intermediate means of infection—examples are typhoid fever, Asiatic cholera and tuberculosis.

HOSPITAL AT HOME.

Every home of any pretensions should contain a room especially arranged and kept ready for the use of sick members of the family. Such a room should be on the upper floor, and preferably in the southeast corner, so as to have the best sunny exposure; or still better, should be itself the upper floor of a two-story annex, separate from the main building, but joined thereto by a light, latticed bridge. It should have no upholstered furniture, a bare but painted floor, and rough-plastered and painted walls and ceiling, without pictures or paper, curtains or hangings. It should contain no sink, wash-basin, water-closet or any other convenience which connects with sewers, and should connect with the kitchen by dumb waiter, or have connected with it a smaller room furnished with a gas stove and the other requirements of a diet-kitchen. It should contain everything requisite for nursing a case of typhoid fever, scarlatina, diphtheria, measles or smallpox; and all its arrangements should be supervised by the family physician. The possession of such an appendage to the home would enable the owner to defy the mandate of a Health Office in regard to removing an inmate thereof to a public pest-house; as it could be shown to the satisfaction of any reasonable court, that therein a case of infectious disease could be better isolated, and more humanely treated, than in any "pest hospital" ever yet erected by our political administrators of health law.—*From Potter's Materia Medica.*

CANCER AND TOMATOES.

As the season of the tomato is upon us and as they constitute a cheap and very palatable food it is pertinent to enquire what, if any, relationship exists between cancer and the eating of tomatoes. There is a widespread suspicion, if not conviction, that the rapid increase of cancer is dependent largely upon the very general use of this vegetable, and many because of such uncertainty forego the pleasure of eating them. A great many enquiries have been made of the officers of the celebrated Brompton Cancer Hospital, England. After an investigation covering two years, Dr. A. Marsden, Chairman of the Medical Committee, says: "Tomatoes neither predispose to nor excite cancer formation, and they are not injurious to those suffering from the disease, but on the contrary are a very wholesome diet, particularly so if cooked."

This is good authority and we hope the lover of the "love apple," as it used to be called will eat it devoid of fear.

APPENDICITIS—THE LATEST FAD.

Have you got the new disorder?
If you haven't tis in order
    To succumb to it at once without delay.
It is called appendicitis,
Very different from gastritis,
    Or the common trash diseases of the day.

It creates a happy frolic,
Something like a winter colic,
    That has often jarred our inner organs some
Only wrestles with the wealthy
And the otherwise most healthy,
    Having got it, then you're nigh to kingdom come.

Midway down in your intestine,
Its interstices infestin',
    Its a little alley, blind and dark as night,
Leading off to simple nowhere,
Catching all stray things that go there,
    As a pocket it is simply out of sight.

It is prone to stop and grapple
With the seed of grape or apple,
    Or a soldier button swallowed with your pie.
Having levied on these chattels,
Then begin eternal battles
    That are apt to end in mansions in the sky.

Once located, never doubt it,
You would never be without it,
    It's a fad among society that's gay;
Old heart failure and paresis
Have decamped and gone to pieces,
    And dyspepsia has fallen by the way.

Then stand back there, diabetis,
For here comes appendicitis,
    With a brood of minor troubles on the wing.
So, vermiform, here's ahoping
You'll withstand all drastic doping,
    And earn the appellation, "Uncrowned King."

—Hon. Clark Bell, in *Inda Pharmacist.*

When doctors disagree,
  An' dunno what does ails yer,
Then, 'twixt you an' me,
  They jes' calls it *"heart failure!"*

—*Exchange.*

VASELONE.

Vaselone is a substance introduced as a substitute for vaseline. According to an analysis by Villon, it is a solution of stearone and margarone in neutral mineral oil. Stearone is prepared by distilling stearin with lime. Margarone is prepared in a similar way from beef suet. Vaselone consists of fifteen parts of margarone and five of stearone in one hundred of thoroughly purified and odorless mineral oil. The fatty product obtained after cooling resembles vaseline, but is not as transparent. It is white, odorless, neutral and not affected by acids and chemical reagents. For obvious reasons it is far better for every purpose than vaseline.

ADULTERATION.

PILL ADULTERATION.

At the West Riding police court, Bradford, on August 16, John Kellett, grocer, of Wyke, was summoned by Mr. Alexander Quinlan, district inspector of food and drugs under the County Council, for an offence under the Food and Drugs Act. Mr. Quinlan stated that on Wednesday, June 27, he called at the defendant's shop and made certain purchases. Amongst other articles he asked for a pennyworth of castor-oil pills, and was supplied by the defendant with a small box containing pills, which, according to the label, were of the kind for which he had asked. He divided the pills into three portions, leaving one with the defendant and sending another to the county analyst. The report of the official in question showed that the pills were destitute of castor oil, the active principle being croton oil.

Croton oil was a purgative, but he (the inspector) now complained that he had not been supplied with the commodity for which he had asked. Kellett pleaded that he had bought the pills in the ordinary way, and had sold them believing them to be castor-oil pills.

A fine of 10s. was imposed, and the defendant was further ordered to pay the costs. The alternative punishment was ten days' imprisonment. The chairman explained to the defendant that he had a remedy if he had been deceived by the person selling him the pills.

ADULTERATION OF ESSENTIAL OILS.

(U. S. CONSULAR REPORTS).

That the consumers of essential oils are not the only persons interested in putting a stop to their adulteration, is evidenced by the fact that last week, in the Italian Chamber of Deputies, Signori Boselli and Fulci (the latter representing Messina) made strenuous efforts to have an almost prohibitory duty put upon French turpentine. They claim that the use made of this article is almost solely to blame for the depression that now prevails in Sicily. The adulterant, it is contended, takes the place of just so much essence, and each pound of turpentine used deprives the Sicilian peasant of the sale of 1,000 of the fruit.

The man who is shrewd enough to foist upon his customers adulterated goods, is equally shrewd in covering his tracks, and he takes care not to import the turpentine in his own name. Very little French turpentine is imported directly into Messina, the greater portion entering Italy at Genoa in small lots consigned to different individuals. The duty paid there, it immediately takes the name of olive oil for machinery purposes, or some other fluid, and is shipped to Messina, but not addressed to the manufacturer of essences. Upon three barrels imported last week, for instance, the addressee was the porter of one of the largest essence exporters in the city. There is but one firm in Messina that is known to deal in turpentine, "citronina canforina," and other adulterants. But while many of the shippers here undoubtedly adulterate, to a greater or less degree, all the manipulation, it is claimed, does not occur in Messina. If the walls of the cellars of some of the importers in the United States (say the shippers) could talk, they would tell a marvelous tale.

A gentleman who, I am sure, ships as pure essence as leaves Messina, avers that a New York importer, who buys thousands of coppers from him every year, advertises and sells essence at a lower figure than he pays for it. There is but one solution to this mystery, and that is that for every copper of pure essence two of adulterated are bought. I asked him why he did not protest, and his reply was that he could not afford to lose a good customer.

Such practices can be stopped by several methods, one of which is for the druggists, etc., to refuse to buy except upon analysis, and to see that the seal of the Messina chemist is intact.

The expense of said analysis will be merely nominal, the importer paying no more for analyzing 500 jars of the essence of the same quality than for one. Duly certified copies of the certificate can be made before any notary, and attached to each jar. I do not, for one moment, suppose that the importer will accept this ultimatum without a great deal of persuasion. A manufacturer here, a short time notified his London agents that hereafter he would sell all his essences by analysis. By return mail, he received a letter stating that if he insisted upon that course, they would be compelled to buy their essences elsewhere.

The method I have above suggested should, without doubt, be effectual, but, of course, it requires unanimity of action upon the part of the purchasers. But granting that all other precautions fail, governmental interference in the interest of pure food might be invoked. If a small duty were imposed upon refined oil of turpentine, which is now on the free list, with the condition that in order that essences be entered into American ports free of duty, they should be accompanied by a reliable certificate of purity (to be paid for by the shipper), the purchaser, buying in original package, would have protection against adulteration.

After reading this report, the importer or druggist may say: "But why the necessity of all this talk about adulteration? There is no need of any essence manufacturer attempting to sell us adulterated goods now, since we can immediately detect it by our polariscope." So the shippers of impure essence in Messina thought for some time, but now they rejoice that it is not true.

I personally experimented with one of these instruments for two weeks, and was soon convinced of its inaccuracy, but my opinion being that of a layman it would bear no weight, so I submitted the results of my investigation to Mr. Moore, the English analytical chemist. I append his reply.

Messina, *June 12, 1894.*

C. Caughy, Esq.,
U. S. Consul.

Dear Sir: In reference to your inquiry, in which you speak of the polarimeter and such like instruments as being largely used for the detection of turpentine in essences, we would state that it is a fact that the polarimeter is so used, but we shall prove, however, that it is useless for this purpose. Pure essence of lemon gives an optical rotation varying from +57° to +64°, according to the districts in which the lemons are grown, the low-lying districts giving the lower rotation. Five per cent of turpentine, added to a pure essence, lowers the rotation 4½°; therefore, a pure essence showing the rotation of 64° will allow of an adulteration of 7.5 per cent of turpentine, and still show the proper rotation of pure essence, viz., 57°. Then, again, by judiciously mixing essence of orange and turpentine, and adding to the essence of lemon, one can obtain the exact rotation of the pure essence. You are aware, perhaps, that in the making of concentrated essential oils there are by-products containing the terpenes, and these are also used in the adulteration of essences, possessing, as they do, the odor of the oils from which they are derived. The optical rotation of the liquid derived from the making of concentrated lemon gives nearly the same figure as genuine essence, and that from the orange gives a high rotation, so that, by adding turpentine to the orange product and using it as an adulterant for essence of lemon, one again obtains the genuine figure for pure essence. When mixed with the genuine essence, it does not seem to sensibly alter the smell, and very few abroad would be able to notice much difference, even up to 50 per cent of adulteration, from that of pure essence.

The samples we have prepared in your presence are as follows:

(1) Pure essence of lemon, specially made.

(2) Essence of lemon with 50 per cent of adulteration, made with turpentine and the orange product, and showing the optical rotation of pure essence.

(3) Essence of lemon with 25 per cent of adulteration, made with turpentine and genuine essence of orange, showing optical rotation of pure essence.

(4) Turpentine, called "citronina," used in these adulterations.

(5) Orange product from making concentrated oil, used in the above mentioned adulterations of 50 per cent.

We only speak of essence of lemon here, but all the essential oils can be adulterated in the same manner, but not, perhaps, with the same materials used for lemon.

We are, yours faithfully,
G. H. OGSTON & MOORE.

Mr. Moore's statements can be very readily verified by any competent chemist.

That the polarimeter may be of the greatest assistance to the honest manufacturer in discovering the optical rotation of his own product, no one can deny, and it is of benefit to him alone. There its usefulness ceases. Beyond that, it is more than useless; it is a delusion and a snare. This statement, I am sure, will be borne out by any chemist after testing the samples sent.

Polarization, optical rotation, polariscopes, polarimeters, refractometers, etc., are high sounding names, meaning very little unless their results are thoroughly confirmed by the crucial test—chemical analysis.

CHAS. M. CAUGHY,
Consul.

Messina, *June 15, 1894.*

As many of the shippers of essential oils are inclined to cast discredit upon the accuracy of chemical analysis, I decided to obtain a convincing test, and, to that end, I addressed the following letter to Messrs. Ferd. Baller & Co., a well-known firm of Messina:

Messina, *June 26, 1894.*

Messrs. Ferd. Baller & Co.,
Messina.

Gentlemen: Having declared that you would be only too willing to co-operate with me in an effort to verify the assertion that chemical analysis is amply competent to detect the use of adulterants in essential oils, I would request that you furnish me with several vials, the proportion of adulteration in them being only known to you. To insure an honest test, beyond all peradventure, you are at liberty to encompass the investigation with any safeguards that you may desire, for it is to our mutual interest that it be conducted in all sincerity.

I am confident that the result will be satisfactory, and that if there be any difference between your figures and those of Mr. Moore's analysis, that difference will not exceed 1, or, at the utmost, 2 per cent. If my anticipations are realized in his report, I feel sure you will concede that what the essence adulterator has claimed to be impossible has, at least, been achieved. I am, etc.,

CHAS. M. CAUGHY,
U. S. Consul.

On June 26 I received the following reply:

Messina, *June 26, 1894.*

Chas. M. Caughy, Esq.,
U. S. Consul, Messina:

Dear Sir: By the bearer we hand you four sealed samples, marked Nos. 1, 2, 3, and 4, of oil of lemon, for the purpose of testing by Messrs. Ogston & Moore, as agreed. We also inclose sealed envelope containing a memorandum of the qualities of the above samples, which envelope is to be opened in our presence, after you have the chemists' certificates of test, in order that you may jointly verify the exactness of their test.

We are, etc.,

FERD. BALLER & CO.

That afternoon I submitted the samples to Mr. Moore, and the next morning I received his report, which I append:

MESSINA, *June 27, 1894.*

CHAS. M. CAUGHY, Esq.,
U. S. Consul, Messina:

DEAR SIR: We have analyzed the four samples of essence of lemon that we received from you, marked "No. 1, F. B. & Co.," "No. 2, F. B. & Co.," "No. 3, F. B. & Co.," "No. 4, F. B. & Co." Each bottle was sealed (F. B. & Co.). We find the following results: No. 1 contains 84 per cent of pure essence; No. 2, 90 per cent of pure essence; No. 3, 100 per cent of pure essence; and No. 4, 95 per cent of pure essence.

We remain, etc.,

G. H. OGSTON & MOORE.

This I submitted to Ferd. Baller & Co., and was present when the envelope was opened. Their reply was as follows:

MESSINA, *June 28, 1894.*

CHAS. M. CAUGHY, Esq.,
U. S. Consul, Messina:

DEAR SIR: In reply to your letter of this date, we are pleased to say that Messrs. Ogston & Moore's analysis of the four samples of oil of lemon sent to you confirms the proportions of adulteration contained in said samples.

The paper in the sealed envelope, opened in your presence, contained the following statement: No. 1, 15 per cent adulteration; No. 2, 10 per cent adulteration; No. 3 pure; No. 4, 5 per cent adulteration.

We are, etc.,

FERD. BALLER & CO.

Messrs. W. Sanderson & Sons have also tested the accuracy of analysis several times, with what result is shown by the following letter:

MESSINA, *June 30, 1894.*

CHAS. M. CAUGHY, Esq.,
U. S. Consul, Messina:

DEAR SIR: In conformity with your desire to have our opinion concerning the correctness of Messrs. Ogston & Moore's analysis of oil of lemon, we beg to state that from the several tests we have put them to on different occasions by submitting to them samples expressly prepared by us for the purpose, we have come to the conclusion that the result of their analysis is all that is required, and that we fully expected the satisfactory result of the trial of their analysis lately made with the samples you asked us for.

We remain, etc.,

W. SANDERSON & SON.

One adulterator of oils has acknowledged to me that if our merchants unite upon analysis, those who continue to adulterate might as well close their warehouses. As for himself, he says, he will in the future make nothing but pure essences for the United States, and if they want it they must pay the price; but so far as other countries are concerned, he will still continue to furnish the adulterations until checked.

In the course of these reports, I have endeavored, to the best of my ability, to treat the subject in all its various phases. My first article contained no expression of opinion on my part. I simply reproduced my questions and the essence shippers' replies. In my second article, I explained the uselessness of the polarimeter and other similar instruments, supporting my assertions with tests, and suggested that the only way to secure pure essence was by analysis; and knowing that those whose products would not stand the searching eye of chemistry would be the first to decry its ability to give to the world secrets of their mixing rooms, I have, in this article, anticipated their criticism by submitting the above correspondence.

All the information I could gain, either by personal research or by practical experiment, I have embodied in these articles.

With this information in his possession, the American merchant ought, in the future, to be able to secure pure essences, if he is willing to pay the price for them.

CHAS. M. CAUGHY,
Consul.

MESSINA, *July 8, 1894.*

ADULTERATED BREAD.

At the Rowley Regis police court, on August 16, E. Sidaway, grocer and provision dealer, Spinner's End, was summoned by Mr. Van Tromp, the inspector under the Sale of Foods and Drugs Act, for selling adulterated bread. The inspector stated that the bread was adulterated with 40 grains of alum to the 4-lb. loaf. Defendant was unable to appear through illness, and the wife stated that she was not aware that there was any alum in the bread. The inspector said as the defendant had acted in ignorance and had recently suffered adversity, he would not press the case. The magistrates under the circumstances only inflicted a fine of 5s., including costs.

ADULTERATION OF SPICES AND CONDIMENTS.

Part 2 of Bulletin No. 13 of the United States Department of Agriculture, Division of Chemistry, is devoted to a popular exposition of the origin of spices and the means employed for their adulteration, and contains as well an extended technical discussion of the subject and of the results of analysis both microscopical and chemical, and the methods which have been proposed by recent authorities for the detection of sophistication. The table of contaminations here given will furnish an idea of the extent to which the ingenuity of spice mixers has gone:

SPICES.	ADULTERANTS.
Allspice........	Spent cloves, clove stems, cracker dust, ground shells or charcoal, mineral color, yellow corn.
Cayenne........	Rice flour, salt and ship stuff, yellow corn, turmeric and mineral red.
Cassia..........	Ground shells and crackers, turmeric, minerals.
Cinnamon.....	Cassia, peas, starch, mustard hulls, turmeric, minerals, cracker dust, burnt shells or charcoal.
Cloves..........	Spent cloves, clove stems, minerals, allspice, roasted shells, wheat flour, peas.
Ginger..........	Cereals, turmeric, mustard hulls, cayenne, peas.
Mace............	Cereals or starch, buckwheat, wild mace.
Nutmeg........	Cereals or starch, wild nutmeg.
Pepper	Refuse of all sorts, pepper dust, ground crackers or ship stuff, rice, mustard hulls, charcoal, cocoanut shells, cayenne, beans, bran, yellow corn.
Mustard	Cereals and starch, turmeric, peas, yellow corn, meal, ginger, gypsum.

MICROBES IN ICE CREAM.

Now a more serious attack has been begun on ice cream, the favorite viand of young women blessed with a healty appetite for sweets. The microscopic have turned their attention to it, with the inevitable result. Ice cream has been found to be the favorite habitat of a number of hitherto unknown species of bacteria that revel in artic cold and are to ordinary bacteria, for strength and fierceness, as is the great polar ursine to the brown bear of temperate climes, kept by proprietors of Catskill hostelries to amuse visiting children. The British Institute of Preventive Medicine has been examining the ices commonly sold in London. The municipal laboratory, of Paris, has made an examination of samples of ices sold in that city and has found them simply "swarming with microbes" of all descriptions. It has not yet been settled that these microbes are dangerous to human life, but their mere presence arouses suspicion of the healthful qualities of the food infested by them. It seems to be taken for granted by scientists, possibly without just cause, that the mission of the microbe, the only purpose of his existence, is to prevent the world from becoming over-populated.

AN OBJECTIONABLE FOOD PRESERVATIVE.

BY H. A. HUSTON, CHEMIST.

In the month of December, 1893, I received from Mr. H. F. Smith, of LaPorte, Ind., a package of material for use in preserving fruits and other perishable food material. The compound was for use in the "Great French Preserving Process," the business headquarters of which were in Chicago. It was also stated that various fruits on exhibition at the World's Columbian Exposition were preserved by this process. There were also inclosed various advertising sheets relating to the selling of the compound itself, and of the rights to territory in which the compound should be sold.

The examination of the compound showed that it was composed of sulphur, charcoal, nitrate of soda, cane sugar and common salt. The salt may have been an impurity in the nitrate of soda used. The composition of the sample was:

Cane sugar.	14.20 per cent.
Salt......................	1.41 per cent.
Nitrate of soda..........	1.36 per cent.
Sulphur.................	57.63 per cent.
Charcoal, moisrure and insoluble matter...	25.64 per cent.

The essentials of the directions for the use of this material were that the compound should be burned in a closed space, and the fumes arising from the burning should be absorbed by water placed in suitable vessels, and that the fruit in some cases should also be exposed to the fumes. Finally the fruit was to be placed in the water which had absorbed the fumes of the burning compound and the vessel closed.

The burning of the compound would result in the production of sulphur dioxide, also known as sulphurous acid, as one product, and it is this substance which exerts the preservative action in the process. The other ingredients are merely to aid in the burning of the sulphur.

This sulphur dioxide is an intensely poisonous gas and its use is prohibited as a food preserver in European countries. When the gas is absorbed by water sulphurous acid, a powerful therapeutic agent, is formed. There is no doubt that its preservative action will be effective, for it is one of the best antiseptic and bleaching agents. But there are grave objections to the indiscriminate use of powerful therapeutic agents in food.

The parties having the material and rights for sale state that the materials or process is covered by a patent. On inquiry at the U. S. Patent Office we learned that the patent with the number said to belong to the process was issued for some sort of machinery, and had no relation to this subject.

The advertising matter calls attention to the very large profit arising from the sale of this compound, and the larger profits in disposing of rights to sell in certain territory. No doubt the profit ought to be large for it sells at one dollar per pound, while the cost of material in one pound would not exceed six cents, even if material of the very best grade were used in its manufacture.

We would advise people not to buy the material on account of its high price and objectionable character as a food preservative, and to have nothing to do with the purchase or sale of territorial rights unless they want to be imposed upon or impose upon others.

The State Dairy and Food Commissioner of Minnesota has recently condemned this material in his report, and Mr. Smith states that *The Poultry and Bee Keeper* wrote up the matter in 1887, at which time the process was offered as a means for preserving meat.

Attention is again called to the matter because it seems probable that the material will be offered to farmers as a means for preserving fruit for food purposes.—*Purdue University Experiment Station, June 14, 1894.*

MORE ICE CREAM POISONING.

Another case of poisoning from eating ice cream has been reported. This time at Elizabeth, N. J., where, it is said, nearly one hundred persons have been affected. So many of these cases have occurred that they have ceased to be mysterious. In every instance where examinations were made by experts, it has been found that the trouble was due to carelessness in making the cream. Either unclean vessels were used or materials were employed in which putrefaction had already commenced, or the mixture had been allowed to stand in an unwholesome cellar or other depository before freezing.

There is a chemical change which takes place under certain conditions in milk from which the cream is made. Unfortunately, these conditions are not always understood by the persons who are engaged in the manufacture and sale of ice cream, and as a consequence, people are poisoned every season. The remedy is for boards of health and other officials to disseminate information bearing upon this subject among those who manufacture ice cream and have to do with the handling of milk, and to follow this up by a rigid inspection of milk, and ice cream making establishments.

INVENTIONS, SCIENCE, ETC.

THE "BLUE PROCESS" OF COPYING TRACINGS.

The materials required in this process are as follows:

1. A board a little larger than the tracing to be copied. The drawing board on which the drawing and tracing are made can always be used.

2. Two or three thicknesses of flannel, or other soft white cloth, which is to be smoothly tacked to the above board to form a good smooth surface on which to lay the sensitized paper and tracing while printing.

3. A plate of common, double-thick window glass of good quality, slightly larger than the tracing which it is wished to copy. The function of the glass is to keep the tracing and sensitized paper closely and smoothly pressed together while printing.

4. The chemicals for sensitizing the paper. These consist simply of equal parts, by weight, of citrate of iron and ammonia, and red prussiate of potash. These can be obtained of any druggist.

5. A stone or yellow glass bottle to keep the solution of the above chemicals in. If there is but little copying to do, an ordinary glass bottle will do, and the solution made fresh whenever it is wanted for immediate use.

6. A shallow earthen dish in which to place the solution when using it. A common dinner-plate is as good as anything for this purpose.

7. A brush. A soft pastebrush about 4 in. wide is the best thing we know of.

8. Plenty of cold water in which to wash the copies after they have been exposed to the sunlight. The outlet of an ordinary sink may be closed, by placing a piece of paper over it with a weight on top to keep the paper down, and the sink filled with water, if the sink is large enough to lay the copy in. If it is not, it would be better to make a watertight box, about 5 in. or 6 in. deep and 6 in. wider and longer than the drawing to be copied.

9. A good quality of white book paper.

The method of use is as follows: Dissolve the chemicals in cold water in the following proportions: 1 oz. citrate of iron and ammonia, 1 oz. red prussiate of potash, 8 oz. water. They may all be put into a bottle together, and shaken up. Ten minutes will suffice to dissolve them.

Lay a sheet of paper to be sensitized on a smooth table or board; pour a little of the solution into the earthen dish or plate, and apply a good even coating of it to the paper with the brush; then tack the paper to a board by two adjacent corners, and set it in a dark place to dry; one hour is sufficient for the drying; then place it sensitized side up on the board on which you have smoothly tacked the white flannel cloth; lay your tracing which you wish to copy on top of it; on top of all lay the glass plate, being careful that tracing and paper are both smooth and in perfect contact with each other, and lay the whole thing out in the sunlight. Between eleven and two o'clock in the summer times, on a clear day, from six to ten minutes will be sufficiently long to expose it; at other seasons a longer time will be required. If your location does not admit of direct sunlight, the printing may be done in the shade, or even on a cloudy day; but from one to two hours and a half will be required for exposure. A little experience will soon enable anyone to judge of the proper time for exposure on different days. After exposure, place your print in the sink or trough of water before mentioned, and wash thoroughly, letting it soak from three to five minutes. Upon immersion in the water, the drawing, hardly visible before, will appear in clear white lines on a dark blue ground. After washing, tack up against the wall, or other convenient place, by the corners to dry. This finishes the operation, which is very simple throughout.

THE CAMPHOR TREE.

While camphor was formerly produced in Sumatra, Borneo, and other parts of the East Indies, all now known to the trade comes from Japan and Formosa. The camphor tree is a large evergreen of symmetrical proportions, somewhat resembling a linden. It bears a white flower, which ripens into a red berry. Some of the trees are fifteen feet in diameter and live to a great age. A group of trees in the province of Toosa about a century old, are estimated to be equivalent to about forty thousand pounds of crude camphor. The camphor is extracted from chips taken from the roots or from the stem near the root, the wood yielding about 5 per cent of camphor, and the root a larger proportion. The annual export of Japan camphor averages about 5,000,000 pounds. The forests in Japan owned by the people are now almost denuded of timber, but the government still possesses large woods of camphor trees, which, it is estimated, will maintain a full average supply of the gum for the next twenty-five years. Plantations of young trees are also making and are well taken care of, and, although camphor has not hitherto been extracted from trees less than seventy or eighty years old, it is expected that under the present intelligent management equally good results may be realized in twenty-five or thirty years. The Japanese Department of Forests, which has the control of these woods, is under good management.

DOES ELECTROCUTION KILL.

A few months ago a sensation was created by the assertion of D'Arsonval, the French expert on electro-physiology, that the electric current as applied to condemned criminals for purposes of electrocution did not kill, but only suspended the vitality of the subject operated upon. He maintained that all these who had apparently been electrocuted had died, not from the effects of the current, but by the knives of the physicians who made the autopsy, and he dared the American physicians to try to recussitate the next criminal who was subjected to the death-dealing current.

The challenge was indiscreetly ignored by the authorities interested in this country, but an instance of the restoration of a person apparently electrocuted has just occurred which can only be taken in the light of an absolute confirmation of M. D'Arsonval's theory. In such cases M. D'Arsonval insists that the same treatment should be tried—with the object of inducing the lungs to recommence their normal respiratory functions—as that for restoring the vitality of the apparently drowned.

A workman at the St. Dennis generating station was putting up a telephone wire. While seated at his bracket he inadvertently touched a wire on the main transmission line, and instantly had 4 500 volts through the body. It was some minutes before the current could be cut off, and it was three-quarters of an hour before he could be got down from the bracket. Artificial respiration was immediately tried. In two hours the man could talk, and he is now apparently none the worse for the accident.—*Exchange.*

◆

French polish is the best to use on any kind of wood if a superior kind of polish is required. If used on hard wood, such as ebony, sandal, box, and others of like nature, merely apply the polish on a piece of clean flannel while the article revolves in the lathe; after giving one or two coats, finish off with metholated spirits or spirits of wine on some rubber. A drop of oil should be applied to every rubber, except the last one for finishing. Should the wood be porous, such as deal, Honduras mahogany, alder, willow, or similar woods, the grain should be filled up with either glue size or plaster of paris; if for turned articles, plaster of paris mixed with oil and applied with a rubber while the article is in motion will generally be found sufficient. For glue size dilute common glue with hot water until quite thin. When dry it may be papered off with glass paper, when the surface will be quite smooth, no matter how porous the wood.

MISCELLANEOUS.

WARNING TO WORKMEN

Health is your sole capital in life. On it depends your own future and that of your wife and children. It is the wall that shuts off the hospital and the poor house; but it is very easily broken down by a little neglect and carelessness.

Have you ever thought how much sickness there is in the community? How many of your friends at the present moment are laid up with some ailment? What amount was paid out of the sick fund during the last year in your mutual benefit society? Who fill the hospitals and crowd the dispensaries in all our large cities? Who support the 90,000 regularly educated doctors, not to mention the legion of quacks who feed like leeches on the life blood and purses of the poor? How do the drug stores on every corner manage to subsist? Who pays the undertaker and the hackman for the cheerless processions which daily cross every ferry to Greenwood and Cypress Hills? These are facts worth the consideration of every working man—not in a morbid or gloomy spirit, but in a candid and thoughtful one. Sickness is his greatest foe. It makes a man weak, miserable, and poor. It robs him of his hard-earned wages, and makes him pay out extra money for food, drugs and doctors, while too often it brings men to the poor-house.

Every year many thousand persons die who might be still alive and well if they had only known how to keep in health; while for every death there are also twenty-eight cases of sickness. Professor Chandler estimates that 10,000 preventable deaths take place annually in New York, besides 280,000 preventable cases of sickness. What a vast waste of human lives and strength this represents!

If you have ever had a severe fit of sickness you know just what it costs, both in physical prostration and in dollars and cents. A severe attack of typhoid fever, for example, means four months' loss of time, besides the doctor's bills and cost of medicine. An ordinary "respectable" funeral without display, will cost $50.00. We say nothing of the human anguish, pain and misery entailed in a thousand homes every year by sickness and death, all of which might be prevented if due effort were made.

You are too sensible to charge upon Providence what is due to the folly of man. You are not an Oriental fatalist, who calmly sits still in the midst of danger, and says, "It is the will of Allah whether I shall die or live." It is your duty, as an intelligent man, to be wise in season, and to consider these subjects.

"But," you may ask, "how am I to know how to keep my health? I am not a doctor, and cannot be expected to understand these matters."

This is true, and we do not intend for a moment to urge you not to take the best medical advice when sickness befalls you; but often by taking a few precautions you can avoid the necessity for calling in a doctor.

Here are a few suggestions for the prevention of sickness. They include, first, attention to your home surroundings, and, second, to your personal habits.

In regard to the first, one of the earliest physicians, Hippocrates, said that the essentials of health were pure air, pure water, and a pure soil. Your home should, above all things, be free from damp. It should not be built upon made land or where it can be flooded by rains or by a rise of tide. Dampness is a certain source of consumption, rheumatism, croup, diphtheria and other diseases. The nearer your living rooms are to the ground, the more danger there is of damp. It is better to occupy an attic where you can get sun and the air than the basement.

Again, new houses are liable to be damp from the evaporation from the plaster and mortar, which contain a large amount of water. A Spanish proverb says of new houses, "The first year for your enemies, the second year for your friends, and the third you may live there yourself." This tells the whole story. Again, cellar air is unwholesome; and this is another reason why basement rooms are bad. It is very unwise to store vegetables in cellars, or anything that will cause impurity of the air.

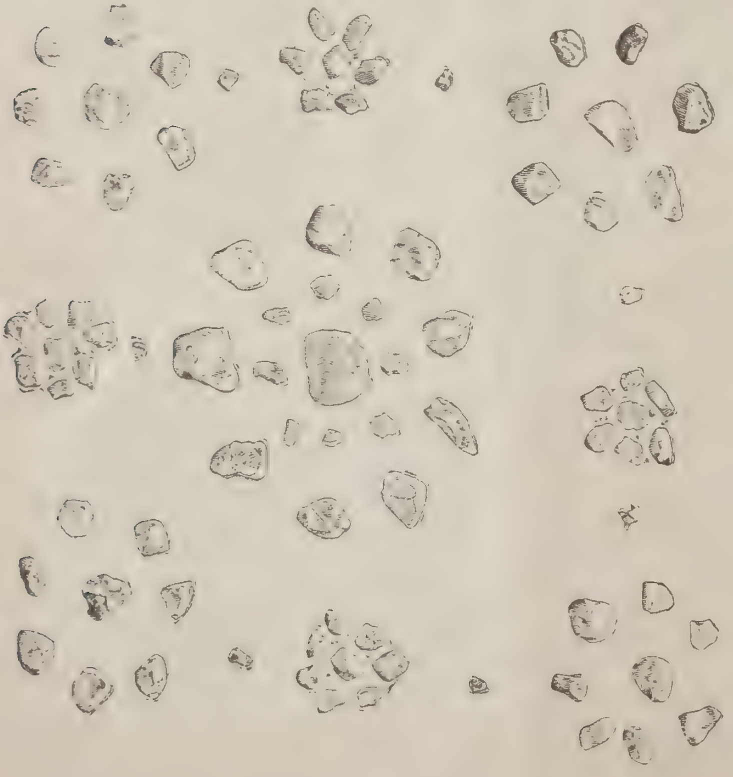
So much for pure soil. Next for pure air. This is the most vital thing of all. One may live without proper food and drink and on a damp soil with impunity, but foul air slays like a sword. Every person needs pure air to breathe. Each time we empty our lungs a certain amount of impure air is thrown off. Thousands die yearly for lack of pure air. It is free to all; it costs nothing. Open the window and it flows in abundance to the beggar as to the millionaire, bringing health and life to all—if only people would not shut and bar it out in their blind, stupid ignorance. When a man gets consumption it means that he has not had enough pure air to feed his lungs. When typhus fever carries him off, it means poisoned by foul air. When his children faint and fall by the way, with scarlet fever, and croup, or diphtheria, it is foul air that does it.

What is it that makes most people sick? Eating too much and too fast; drinking too much; want of fresh air; want of sunlight; want of exercise; want of cleanliness. Few persons die of starvation; many of do gluttony. But you will

BUFFALO LITHIA WATER

A POWERFUL SOLVENT OF STONE IN THE BLADDER.

The following plate is from a photograph and represents the exact size and shape of Calculi passed by the Hon. T. J. Jarrett, ex-Mayor of Petersburg, Va., under the action of Buffalo Lithia Water.



The original stone shown in the cut together with one from a similar case, will be on exhibition at Ditman's Pharmacy, Astor House, Corner Broadway and Barclay Street, New York, from where water may be obtained.

Statement of Dr. John Herbert Claiborne, M. A., M. D., of Petersburg, Va., ex-Presiden and Honorary Fellow Medical Society of Virginia.

PETERSBURG, VA., Sept. 5, 1892.

E. C. LAIRD, Buffalo Lithia Sprnigs, Va.

My Dear Doctor:—I send by this mail a box of CALCULI, passed at various times within the last year by Hon. T. J. Jarrett, our former mayor, whilst drinking the BUFFALO LITHIA WATER. They give him but little pain now when passing. I have never critically examined the broken CALCULI, passed in such quantities from Mr. Jarrett's bladder, but am under the impression that the most of them were MANESIAN PHOSPHATES. There were specimens, however, which presented the appearance of OXYLATES, and, I remember, impressed me specially as being URIC ACID. I do not pretend to account for the mode of their solution by the Buffalo Lithia Water. There is nothing in its analysis which would warrant such results, but THE RESULTS ARE THERE, and seeing is believing. I can only suppose that in Nature's alembic there has been some subtle solvent evolved, too subtle to be caught by our coarse agents, which makes this wonderful disintegration. "There are many things in heaven and earth not dreamt of in our philosophy," and his is a short creed who believes only what he can prove or explain. Faithfully yours, JOHN HERBERT CLAIBORNE.

It is well known that stone in the bladder, for the most part Gout, Rheumatic Gout Rheumatism, and also various forms of Dyspepsia and Nervous prostration have a common origin, viz.: excess of uric acid in the blood. It is evident, then, from the foregoing statement, that this water must possess extraordinary potency alike in all of these maladies. In Bright's Disease of the kidneys it is well-nigh specific.

Water in cases of one dozen half-gallon bottles, $5.00, f. o. b. here, and for sale by all first-class druggists.

Illustrated 32-page pamphlet, giving further information, sent prepaid on application to

THOMAS F. GOO D, Proprietor,

BUFFALO LITHIA SPRINGS, VA.

say, "If I get sick I can't help it; it's only bad luck that brings fever and rheumatism." Not so, my friend, there's no luck in cutting your fingers, if you fool with edge tools. More than half the sickness in the world is preventable, as any doctor will tell you. A sick man is a rascal, someone has said, because he has no business to get sick.

Make your children wash their hands and faces before going to school. When they are recovering from sickness, do not let them go back to school or play with other children until they are entirely well. Remember that your children will in time become valuable helps and breadwinners, so take care of them while they are young, so that they may grow up strong and healthy.

Bathe as often as you can. Remember, "cleanliness is next to godliness," and a foul body means a foul mind. Keeping the pores of the skin open is a prime element of health. How carefully we groom our horses! And is not a man's health as precious as that of a horse?

Let your wife and children have as much outdoor exercise as they can get. It will be a change and will not do the least harm. Take them to the park, or the battery, or Coney Island when you can, or at least across the ferry or down the bay.

Do not sit in damp clothes if you come home wet. If you feel chilled and cold, soak your feet in a pail of hot water, then go to bed and pile on the clothes till you sweat, and you will escape catching cold. In such cases hot tea or coffee, or soup is better than whisky to warm you. In cold countries tea is preferred to any drink. Liquor should never be taken by a sick person, unless by a doctor's orders.

Clothes should fit loosely, should be light, warm and porous, should be adapted to the season as to color, should be frequently changed, and should be scrupulously clean. The wearing of clothes until they are threadbare is an error.

In cooking, use the frying-pan as little as possible; greasy food is very unwholesome. Avoid pies, too much pork and liquors.

Eat slowly, chewing the food well, and drink very little liquid of any kind while eating. Tea is not food, and too much of it is drunk by many persons, especially women and children. You cannot make bone and muscle upon "slops." Eat oatmeal and hominy in preference, and give children plenty of milk. Beans are very nutritious.

Do not shut every cranny and crack to keep out the air from the rooms, but let the windows stay open for a time.

Do not forbid the blessed sun from entering your windows. Do not stay in a house that has a bad smell in it.

Do not live in dark, gloomy, close rooms if you can get sunny, cheery ones. Is it not cheaper to give a little more rent to keep death and the doctor away from your door? Does it not pay to keep well? Think how much you have lost by a few weeks' sick spell. Would not the money have gone much further by avoiding sickness? "An ounce of prevention is worth a pound of cure."

Remove all garbage and refuse as soon as possible, especially bedroom slops. Have the walls and ceiling whitewashed or kalsomined once or twice every year.

Do not keep your rooms full of steam on washdays, for that is a sure way to have your children down with colds or croup the day after. Open the window at the bottom, and place a board in the vacant space; then sufficient air can come in through the space between the upper and lower sashes without causing too great a draught. Keep the children out as much as possible on washdays.

Do not souse water over the floors and stairs, even for the sake of cleanliness, as the woodwork becomes saturated with moisture, and continual damp breeds disease.

In looking for apartments, always strive to secure a well-ventilated bedroom. Air the room and bed clothing every morning. Keep as few clothes, not in use, as possible in the bedroom, and do not sleep in any garment which is worn by day. Have no carpet on the floor, but a strip alongside the bed. Wipe off the entire floor once a week with a cloth dampened in water containing a little carbolic acid.

A MIXED MARRIAGE.

Doctor King, of Adelaide, married a Miss Norris. Shortly after the doctor's honeymoon, the doctor's son married a sister of the doctor's wife. Then a brother of the doctor's wife married the doctor's daughter. In other words the doctor's son became his stepmother's brother-in-law, and the doctor's daughter became her step-mother's sister-in-law. The doctor, by marriage of his son to the sister of his wife, became father-in-law to his sister-in-law; and the doctor's wife, by the marriage of her sister to her step-son, became step-mother-in-law to her own sister. By the marriage of the brother of the doctor's wife to the doctor's daughter, the doctor became father-in-law to his brother-in-law, and the doctor's wife became step-mother-in-law to her own brother. The problem as to what relationship the children of the contracting parties are to each other remains unsolved.

NEUROSINE

THE MOST POWERFUL NEUROTIC ATTAINABLE.

ANODYNE AND HYPNOTIC.

A reliable and trustworthy remedy for the relief of Hysteria, Epilepsy, Neurasthenia, Mania, Chorea, Uterine Congestion, Migraine, Neuralgia, All Convulsive and Reflex Neuroses. The remedy par excellence in Delirium and Restlessness of Fevers.

FORMULA: Each fluid-drachm represents 5 grains each, C. P. Bromides of Potassium, Sodium and Ammonium, 1-8 grain Bromide Zinc, 1-64 grain each of Extract Belladonna and Cannabis Indica, 4 grains Ext. Lupuli and 5 minims fluid Ext. Cascara Sagrada, with Aromatic Elixirs.

RICHMOND, VA., Sept. 29, 1891.

I prescribe NEUROSINE in the class of cases for which it is indicated, daily, and with satisfactory results. It completely relieves restlessness in Fevers.

Landon B. Edwards

Ed. Virginia Medical Monthly.

MEMPHIS, TENN., Feb. 6, 1892.

I obtained happy results from the use of NEUROSINE. It is certainly the best neuralgic medicine I have used. I have tried it in some cases of Trifacial Neuralgia, after having tried some of our most powerful remedies. None acted as well as NEUROSINE.

Editor Memphis Medical Monthly.

MEMPHIS, TENN., Jan. 7, 1891

I have obtained entire satisfaction from the use of NEUROSINE in cases of Neuralgia.

Dean Memphis Hospital Medical College.

CHATTANOOGA, TENN., Sept. 6, 1891.

Having used NEUROSINE in a number of cases I must say the preparation has given better results and more universal satisfaction than any other combination ever used by me. Have tried it in many nervous affections, in some it is a specific, in others a therapeutic agent of very great value.

W L Gahagan

Coroner of Hamilton County

MCKENZIE, TENN., Feb. 12, 1891.

NEUROSINE had such a happy effect in a case of Neuralgia or Congestive Headache, in which I tried it, often having failed on other things of similar nature. The case was one of long standing Sick Headache of peculiar character. The lady, three days after confinement, without any fever, took severe headache. NEUROSINE relieved her immediately.

R D Erwin

FOURCHE ARCUAULT, MO., March 29, 1892.

I sent about two tablespoonfuls of NEUROSENE to an old lady, aged 84 years; she had been complaining for some weeks with Headache and Neuralgic pains all over her body more or less. She took that small amount and has been quite free from pain ever since, went to church in a farm wagon, 1½ miles, rough road, and is still free from pain and sleeps and eats better. I am well pleased with it.

U. H. JOHNSON, M. D.

DOSE: From one teaspoonful to a tablespoonful, in water, three or more times daily, as may be directed by the physician

Supplied in Eight-Ounce Bottles.

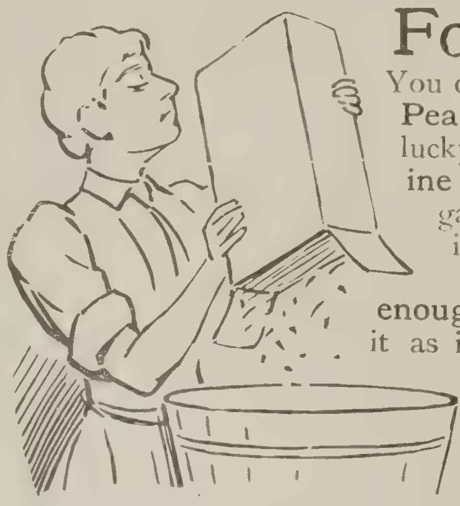
DOSE.—For adults, a dessertspoonful three times a day, after meals. In urgent cases, where there is much pain, dose may be given every hour or two, *always in hot water.* Put up in Eight Ounce Bottles.

To any Physician, unacquainted with the medicinal effect of Dioviburnia and Neurosine, we will mail pamphlets containing full information, suggestions, commendations of some of the most prominent professors in medicine and various methods of treatment. Or to those desiring to try Dioviburnia and Neurosine, and will pay express charges, we will send on application a trial bottle of each.

DIOS CHEMICAL COMPANY, ST. LOUIS, MO.

SEASONABLE AFFLICTIONS.

From the time the sun enters Aries until he reaches Libra—or, in other words, through spring and summer—an especial class of evils affects humanity and indeed the evil influence may affect the sensitive until winter declares itself. Nettle-rash, hives, prickly-heat, chafing skin, pimples, pustules and boils are the seasonable woes which, widely as some of them differ from others, may all be classed together as common products of impure blood and abnormal temperature. In themselves, these cutaneous conflagrations, though painful, exasperating and sometimes almost maddening, are rarely fatal, but the primary condition in which they arise—the disordered blood—is something which may very well have the gravest results. The blood reaches every atom of all the tissues of the body. One that is not so constantly replenished and sustained must immediately be cast off, for it has become dead matter. For the performance of this all-important service the life-current not only courses through the arteries and veins where the eye of the anatomist may easily follow its progress, but it traverses a multitude of channels so infinitely fine that only the microscopist may discern their ramifications. Pure blood passes through all those ways, but particles of foreign matter, even if so inconceivably minute as to be scarcely visible under a powerful lens, obstruct the slender channels. Where such a particle lodges, it irritates the extremely delicate tissue with which it is brought in contact. Inflammation ensues, inducing suppuration, which is nature's method of opening a new channel, directly to the surface of the skin, through which the offending molecule may be got rid of. There you have the genesis of the pimple, the pustule and the boil. Sometimes the foreign substance is too large to reach points where it will be productive of such effects. In such cases, it may be carried to the arterioles of the brain, lodge there as an embolismic clot and suddenly kill. Or it may chance to keep in the larger blood channels until, agglomerated with others of its kind, it forms a fibrinous mass and eventually effects a lodgement in the valves of the heart, killing either slowly or suddenly according to how it may be placed and the extent of its interference. These are, of course, only an illustrated few of the many malefic effects of foreign matter in the blood. But, how does such matter enter there? In two ways; through pervision of the organs of assimilation, which, being weakened—through non-performance by the associated organs of digestion and excretion, of their proper functions—take up. along with the nutritive elements of food, the deleterious products of fermentation in the stomach and bowels; and also, through the loading of the blood with the effete matter, the waste resultant from the processes of life in the tissues. A little reflection upon this progression of evils will make clearly apparent to every one that no surface indication of blood disorder, even a little pimple, is unimportant and may be neglected with assured impunity. In other ways, yet more directly, vicious foreign matter enters the blood, by the infection of certain diseases and the absorption of poisonous matter, such as the pus of wounds. From whatever causes may have come the vitiation of the life current, the only treatment which can possibly restore it to conditions compatible with health is the administration of some powerful "alterative" medicine, which by vitalization, purification and invigoration of the organs supplying it will furnish only clean and nutritious blood and aid the work of eliminating the factors of disorder already introduced. The alteratives recognized by medical science as most reliably efficient in all cases are the active principles of sarsaparilla, yellow dock, stillingia, and other powerful alteratives. Severally of good but slow effect, they are found to be much more potent when administered in combination and a standard officinal preparation of them has been made, known as "Ayer's Compound Extract of Sarsaparilla," which is indubitably the best blood purifier known to modern science. No other was allowed to be exhibited in the World's Fair at Chicago, the judicial verdict upon its sole admission being a re-affirmation of the experience of the medical profession and the public, that it has no rivals.



Foolish Woman!

You can't spare the time to measure your **Pearline**? Well, that helps us, but it's lucky for you that an overdose of **Pearline** does no harm. It's only extravagance. Beware of a dose of the imitations.

You can get just as good work with **enough Pearline** as with **too much**. Use it as it ought to be used, and don't waste it, and you can't think that it's expensive. To get the best results from **Pearline**, use it just as directed. You'll save more of everything than with anything else. If your grocer sends you an imitation, **return it, please.** 388

FRETTING.

The following little poem will apply to almost any weather, or any condition of life. We verily believe the most of the ills of life are the anticipated and ever-coming ones. Even when misfortunes come, and calamities befall, they may often by the potent wand of optimism be changed into blessings. Fretting and whining, while generally accompaniments of poor health, or physical pain and debility, are often promotive of these conditions. Everybody should cultivate a cheerful disposition. It is contagious. It is a contagion to be invited, and prized when caught. It is helpful to the subject, and to all coming in contact with him or her. Hence no isolation or quarantine is suggested for the prevention of cheerfulness. "Let joy be unconfined."

Don't fret about the mercury,
Or watch it all the time,
The old thermometer won't burst,
However it may climb.
It doesn't do you any good
To count up the degrees,
And all your talk about the heat
Won't start a bit of breeze.

Don't fan yourself too much. It makes
You hotter when you stop.
Don't tell the suffering neighbors that
You feel as if you'd drop.
Don't drink too much cold lemonade;
A glass or two will do.
And don't ask everybody,
"Is it hot enough for you?"

Just go about your daily tasks
As calmly as you can.
Don't hurry: take things easy, and
You'll be much happier than
The chap who groans and frets and stews,
And fusses all the time.
Just follow this advice, and you'll
Be glad you read this ryhme.

—*Somerville Journal.*

HOW TO CLEAN WINDOWS.

Simple as the operation may seem, there is a way to clean windows and a way not to clean them.

The following suggestions may be of use to some, as they save both time and labor.

Choose a time when the sun does not shine on the window, else it will be dry-streaked, and no amount of rubbing can prevent it.

Brush off all the dust inside and out, and clean woodwork around glass first. Use for this warm water and ammonia.

Do not use soap. Wipe dry with cotton cloth. Do not use linen, as it leaves lint on the glass when dry. Polish with tissue or old newspaper.

◆

DOWN IN GEORGIA.

"Well, Jim, how's the ague?"

"Didn't I tell you about that? Why I went into old man Sharp's melon field one night about a week ago, and the old man got up and loaded his gun in the dark 'n' cuss me if he didn't blow me full of two grain quinine pills! I hain't had an ache nor shake since."—*Life.*

◆

There is more catarrh in this section of the country than all other diseases put together, and until the last few years was supposed to be incurable. For a great many years doctors pronounced it a local disease, and prescribed local remedies, and by constantly failing to cure with local treatment, pronounced it incurable. Science has proven catarrh to be a constitutional disease and therefore requires constitutional treatment. Hall's Catarrh Cure, manufactured by F. J. Cheney & Co, Toledo, O., is the only constitutional cure on the market. It is taken internally in doses from 10 drops to a teaspoonful. It acts directly on the blood and mucous surfaces of the system. They offer one hundred dollars for any case it fails to cure. Send for circulars and testimonials. Address,

F. J. CHENEY & CO., Toledo, O.

☞Sold by druggists, 75c.

ALL ABOUT PENS.

Sharp-pointed bodkins, made of bronze, of steel or of iron, were the first pens, and they were used for cutting out letters and hieroglyphics in the limestone, sandstone or steatite of Eastern countries. Such pens were also used for writing on Assyrian tablets. The tablets were made of soft clay, and after receiving inscriptions were dried in the sun or baked in the fire.

In the Far East and in Egypt the camel's hair pencil soon took the place of the metal bodkin. With the pencil letters were painted on the skins of animals and the back of trees, in much the same manner that the Chinese draw them on paper at the present day.

In Persia, Greece and Syria, wax and leaden tablets came into use, and the stylus became their popular pen. The stylus was made of bone, ivory or metal, with one end pointed and the other flattened. The flattened end was used to erase errors made in writing.

The use of parchment and papyrus, however, called for a more flexible pen than either the bodkin or the stylus, so reed pens were invented. For making these pens a peculiar kind of reed was used, which was shaped to a point and split, similar to the pens now in use.

In A. D. 553 it was discovered that quills made much better pens than reeds. The quills of the goose, the swan and the crow were used principally. Several centuries later, when writing paper was introduced into England, the quill pen was still the favorite writing instrument. However, the quill pens had been greatly improved, and those from Russia and Holland were excellent.

In the early part of the present century there was a demand for something better and more durable than quill pens. Accordingly a great many experiments were made with horn, glass, tortoise shell and finally with steel, silver and gold. It was soon found that pens made of horn and tortoise shell softened under the action of the ink and were not so good as quill pens. Nor were the silver pens very good. They were too elastic and too easily worn at the points.

In 1803 steel was tried in Wise's "barrel" pens, but being poorly made and very expensive, they were not a success. At Birmingham, England, in 1820, the manufacture of steel pens began in earnest, and they proved to be excellent. The first gross of steel pens sold in Birmingham brought $30 at wholesale.

They were soon manufactured in great numbers, and have been getting better and cheaper all the time, until now we can buy for a trifle the best steel pen made. Europe has always excelled in the manufacture of steel pens, and America is noted for the manufacture of gold pens. —*Philadelphia Times.*

* * *

Artificial whalebone is now being made by treating leather first with sodium sulphide and then with potassium sulphate, stretching it on a frame, and drying slowly at a temperature of fifty to sixty degrees C.

* * *

The strongest timber known is the "Bilian" or Borneo iron wood, whose breaking strain is 1.52 times greater than that of English oak. By long exposures it becomes of ebony blackness and immensely hard.

* * *

Mrs. Snaggs (severely)—You are surely not smoking a cigarette again?

Mr. Snaggs (placidly)—No, dear, I never smoked this one before.

One pound of cork is amply sufficient to support a man of ordinary size in the water.

* * *

An American inventor is said to have devised a machine for making gas for illuminating purposes out of wood instead of coal. The machinery is said to be very simple, consisting merely of a retort and purifying chamber, with a tank for holding the gas. It is claimed that the machine can be used for domestic purposes, and that by attaching it to an ordinary cooking stove enough gas to last a day can be made by the fire necessary to do the cooking.

* * *

A triumph in engineering is reported from the mountains of Peru, where a twin-screw steamer of 540 tons, 170 ft. long and 30 ft. wide, has been successfully launched on Lake Titicaca, the highest navigable waters in the world, more than 13,000 ft. above the sea. This steamer, which belongs to the Peruvian Government and is to be used for freight and passenger traffic, was built on the Clyde, then taken apart in more than 1,000 pieces, and shipped to Mollendo by sea. It was then carried to Puno by railway, and transported over the mountains on the backs of llamas and mules, and put together by a Scottish engineer.

* * *

Watch a good workman. He is never in a hurry; he never works fast; he seldom gets tired, and when he is tired, he stops. The great art of working is not to go beyond your pace. Every good horse has his pace, and in that pace he will do ten miles with pleasure and come in fresh. Urge him beyond his pace or fret him with alternate fast or slow, he will show signs of fatigue and end his day exhausted. One test whether we are working right or wrong is our enjoyment of our work or our want of enjoyment. The person who is working calmly and doing his best takes pleasure in his work.

* * *

It makes the crab blush when he gets into hot water.

"40 Years Without a Stomach"

was Carlyle's expression of the experience of many people who reach middle life before their digestive organs loudly protest against improper food. The first warning generally comes from food cooked with lard. How often we hear the remark, "I like it, but dare not eat it." To anyone in this common condition

Cottolene

the new vegetable shortening, is indeed a boon. By the use of this new and wonderful food-product the disagreeable effects of lard-cooked food are altogether avoided. The features of economy, convenience and adaptability, emphasize the above, and demand the attention of careful housekeepers to COTTOLENE.

THE AMERICAN COTTON OIL CO.

Sold in 3 and 5 pound pails by all grocers Made only by
The
N.K. Fairbank Company,
CHICAGO.
St. Louis New York,
Boston, Philadelphia, Montreal,
San Francisco, &c.

50 YRS THE ORIGINAL CORN STARCH. 50 YRS

KINGSFORD'S OSWEGO STARCH

THE ORIGINAL

PUREST STRONGEST BEST

Highest Awards

CHICAGO. 1893. PHILADELPHIA. 1876. LONDON. 1851.

Try "SILVER GLOSS."

T. KINGSFORD & SON. Manufacturers. OSWEGO, N.Y. U.S.A.

SOLD ALL AROUND THE WORLD.

BEST QUALITY IS GOOD ECONOMY.

THE STANDARD OF EXCELLENCE FOR OVER FIFTY YEARS.

First Assistant Postmaster General, Frank H. Jones, sent the following matter to all postmasters, with orders to post the card containing it in their offices and call the attention of their patrons to it, that their mail could be returned.

"Don't mail your letter or valuable package without having your own address written or printed upon the left hand corner.

This will ensure its return to you if not delivered, and will prevent its being sent to and opened at the Dead Letter Office, Washington.

THE U. S. OFFICIAL POSTAL GUIDE warns us that over 5,000,000 pieces of mail matter go to the Dead Letter Office annuall , containing many thousands of dollars; part can be returned to the senders and part cannot. If all letter writers would stick their *Printed Address* on their envelopes the Dead Letter Office at Washington could be abolished."

The above statement of the Post Office Department proves the great value of Gummed Addresses to every man, woman and youth who write letters. Think of it! Over 5,000,000 "dead letters" sent to the "Dead Letter Office" annually containing tens of thousands of dollars, etc., simply because the writers' addresses do not appear on the envelopes. This is a matter too important to be overlooked.

YOUR FULL ADDRESS Printed boldly on **1000** separate slips of postage stamp paper, 500 post-paid to you to stick on your **letters**, books, etc., and one each on **500 parcels of mail** from publishers, etc. to you, **no two alike**, together with our 16 page paper all for **10 cts.** Terms to agents, members of churches, schools, clubs, etc., 2 orders 18c.; 3, 25c.; 10, 60c.; 20 and over, 5c. each address. **O. I. C. U R** going to order. We've nearly 200,000 customers already. Many from your town. **Your P. M.** can give you their names. **THE HERALD, Test No. 48 B. Lum St., Phila , Pa.**

It is called a "catboat" perhaps because of its tendency to get its back up.

Oddly enough, it always makes a horseman hot to lose the heat.

Those wanting to talk through their hats are never stopped by the noise made by the band.

Even the clairvoyants refuse to make any predictions now as to when Congress will adjourn.

A wise man knows the value of silence when a child cross-examines him before his friends.

You may love your neighbor as yourself, yet you dislike to feed his pigeons on the sweet corn that is just popping out of the ground in your garden.

A CHEMICAL TRIUMPH.

Among the salutary achievements of modern chemical science a most important one is the preparation in such a way of Scott's Emulsion of Cod Liver Oil with Hypophosphites of Lime and Soda as to prevent any unpleasant fishy flavor, while preserving and concentrating its fine healing, strengthening and pulmonic principles. This has been attempted in earlier preparations, but with very indifferent success. By the ordinary preparations the stomach of the invalid was too frequently nauseated and the end in view defeated, since the oleogenous principle unscientifically prepared and unmodified by Hypophosphites, remained indigested in the stomach and consequently inert. For Consumption, Bronchitis, Coughs, Colds, Scrofula, Anaemia, Marasmus or wasting away, it is incomparably fine. Medical and private testimony both go to show that the co-operative action of the phosphorus in the Hypophosphites with the oil renders it a beneficient flesh producer.

A LITERARY WOMAN'S OPINION

There are days when the wear and tear, the excitement and the physical labor almost carry me under and make me waver in my resolve to bid a long farewell to the indolent life of a pampered literary star, but when that cowardly feeling threatens to carry the day, I know that I am "nervous," and that I need a "bracer." Cocktails are mannish and vulgar, Turkish baths are a failure, but a dose of Bromo Soda of William R. Warner & Co., which like all brain-workers I have learned to keep at hand within my own home, soon sets me to rights again wthout subjecting me to any demoralizing dangers, and almost "makes a new man of me," or would if that feat were possible.

A SINGLE SENTENCE.

A recent issue of the *Troy Budget* contains this item:

An experienced traveler says: "This is the strongest single sentence I ever saw printed in a railroad advertisement, that I believe to be absolutely true:

"'For the excellence of its tracks, the speed of its trains, the safety and comfort of its patrons, the loveliness and variety of its scenery, the number and importance of its cities, and the uniformly correct character of its service, the New York Central & Hudson River Railroad is not surpassed by any similar institution on either side of the Atlantic.'"

Sick and Nervous Headache

SPEEDILY RELIEVED BY

WARNER & CO.'S EFFERVESCING

BROMO

(WARNER & CO.)

SODA

—USEFUL IN—

Nervous Headache, Sleeplessness, Excessive Study, Acute Migraene, Nervous Debility, Mania, etc.

—DOSE—

A heaping teaspoonful in half a glass of water, to be repeated once after an interval of thirty minutes, if necessary.

It is claimed by prominent specialists in nervous diseases, that the Bromide Sodium is more acceptable to the stomach than the Bromide Potassium. An almost certain relief is obtained by the administration of this Effervescing Salt It is used with advantage in INDIGESTION, the DEPRESSION following alcoholic and other excesses, as well as NERVOUS HEADACHES. It affords speedy relief in MENTAL and PHYSICAL EXHAUSTION.

Prepared by WILLIAM R. WARNER & CO., Philadelphia and New York.

Sold by Leading Druggists.

ESTABLISHED 1823.

ALEX. YOUNG CO., LIMITED,

DISTILLERS OF

Y. P. M. WHISKIES

DISTILLERY, - Nos. 408, 410, 412 and 414 South St.
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PHILADELPHIA, PA.

New York Office, - - - 78 Wall Street.

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HOUSEHOLD.

TESTED RECEIPTS.

Every receipt here given is original, has been practically tested by the AMERICAN ANALYST and is therefore confidently recommended.

WHEAT BREAD.

Mash a good sized potato, and turn on it one pint of boiling water, stirring until the potato is dissolved. Add a tablespoonful of sugar, and set all away to cool. About 4 in the afternoon add to the above one National yeast cake dissolved in a little water, and flour to make a stiff batter. Just before retiring, mix with a quart of flour one teaspoonful of lard and salt, and knead the sponge with this, adding more flour until it is stiff and hard. It should be kneaded at least one half hour. In the morning mould into two loaves, and when well raised bake at least one hour if the loaves are thick. See next receipt.

GRAHAM BREAD.

When the sponge is ready for white bread, take out one-third of it, add one half cup molasses, and stir all the Graham flour in you can. Finish same as white bread.

STEAMED BROWN BREAD.

Two cups Graham flour, one cup Indian meal, one tablespoonful salt, one tablespoonful vinegar, two cups of water, two teaspoons of soda, one half cup molasses. Steam in a steamer three hours, putting the bread into a well greased pail, leaving it two-thirds full, and leaving the top on the pail.

CORN BREAD OR MUFFINS.

One pint buttermilk, one egg, one half-cup sugar, one half-cup flour, one tablespoonful lard, one teaspoon soda, stir in the finest corn meal to a batter.

GOLDEN MUFFINS.

Two teacups sweet milk, two eggs beaten very light, one-half teaspoon salt, one tablespoon butter, one tablespoon sugar, three teacups flour, two teaspoons Royal Baking Powder.

QUICK BISCUIT.

Allow one tablespoonful of lard or butter to one quart of flour and two teaspoonfuls of baking powder. Add a little salt, and mix with milk to make a soft dough. Roll out, cut into biscuit one inch thick and bake.

MOTHER'S MUFFINS.

One egg, one teacup of sour milk, two tablespoonfuls of sugar, a little salt, one tablespoonful of melted butter, one-third teaspoonful of soda dissolved in one teaspoonful of hot water, Graham flour to thicken. Bake in a well-oiled and heated gem pan.

MOTHER'S LEMON PIE.

Slice two lemons as thin as possible, putting them in an earthen dish, and pour over one and one-half teacups of sugar. Slightly cut the pulpy parts so as to allow a free escape of the juices. Add one teacup of water, and two well-beaten eggs. Bake between two crusts. This will make one thick pie or two rather thin ones.

HUCKLEBERRY PIE.

Wash and thoroughly pick over the berries. Then dredge well with flour until all are white, putting in one cupful of sugar. Do not add any water when you put them on the lower crust. Bake between two crusts.

SURE CUSTARD PIE.

Beat two eggs well; add one-half cupful of sugar, a little salt, cinnamon and nutmeg to taste. Place this in a quart cup, and fill the cup with milk until the whole quantity makes one and a half pints. Be sure there is no more of the filling than this. Bake with an undercrust slowly. Do not have too hot a fire, or the custard will break. When the pie is done, a knife carefully inserted in the custard will come out clear instead of milky.

LEMON CRUMB PIE (VERY GOOD).

Grated rind and juice of one large lemon, one large pint of soft bread crumbs (no crusty parts), one cupful of sugar, the yolks of two eggs, half a teaspoonful of melted butter. Place in a quart cup, and fill with water until the whole filling is a scant pint and a half. When baking, use only an undercrust. Spread the beaten whites of the two eggs, mixed with a little sugar, over the top at the last, and brown.

SQUASH PIE.

One half-pint of baked squash, one egg, scant tablespoonful of ginger, cinnamon, nutmeg, and salt to taste. Enough milk to make the entire mixture a large pint in quantity. Sweeten with molasses, and bake with only an undercrust.

SOME SPICE RECEIPTS.

KIDDER'S SWEET SPICE.

Cinnamon, cloves, mace, nutmegs, sugar. All in fine powder. Mix of each one ounce.

SAVORY SPICE.

Cloves, mace, nutmegs, pepper, salt. All in fine powder. Mix of each one ounce.

MIXED SPICE.

Allspice, ginger, nutmeg, of each two drams; capsicum, two ounces; lemon peel, grated, mustard, pepper, of each eight ounces; salt, sixteen ounces. Mix.

ANOTHER.

Capsicum, two drams; allspice, ginger, nutmeg, of each four drams; lemon peel grated; mustard, pepper, of each one ounce; salt, two ounces. Mix.

ANOTHER.

Sage leaves, mint leaves, of each two ounces; celery seed, pepper, of each two drams. All in fine powder. Mix.—*Indiana Pharmacist.*

A GOOD CAKE.

A CAKE-BAKER GIVES INSTRUCTIONS.

By the expert cake-baker the following instructions will be thought "uncalled for." My desire to assist those who are not experts causes me to deem them necessary. An examination of the cakes, particularly the best cakes, at a dozen or more shops in different parts of London, will, I think, demonstrate that all who profess to make cakes are not experts.

The cakes that I find subjected to the most torture, and which, consequently, present the worst appearance, are the members of the family known as pound cake, such as the pound cake itself, the Genoa, Geneva, Genoese, etc., and also universally known, but much abused, sponge cake. There is but one way to produce a good cake—say pound cake—for if you succeed in making that well, all others made in like manner will also be good. A pound cake, to be good, should present an even surface—I refer to the flat cake—both in point of texture and color, slightly rounding towards the centre, without a break in it and entirely free from white lines or specks. It should be light, yet solid enough to admit of its being cut without crumbling, and the inside should present an even, light, yet compact appearance. Its lightness should be of an even nature, not composed of large and small cells, all cells in a well made cake being of an even size. The inside, like the outside, should be entirely free from lines, streaks or patches, and should be of an even color throughout.

To produce a cake of this standard is an easy task if the following points are rigorously observed:

1. Use only fresh chicken's eggs.
2. Use only a firm, tough, good colored and full flavored butter.
3. Use powdered sugar.
4. Use a dry, strong flour, and be sure to pass it through a sieve before using it.
5. In winter warm the butter and sugar, or the bowl, by any means to the end to render the butter just soft enough to cream well.
6. In summer reverse this, and adopt any means to the end to prevent the butter becoming too soft during creaming. More care is here necessary than at first appears. For example, the butter may appear just soft enough to cream, when the worker has forgotton that the heat of the hand and the action of creaming tends to soften the outer surface. An oversight of this kind will result in a poor cream. Greater caution is even necessary in this particular in winter than in summer. As the butter is harder in winter than summer, one is tempted to soften it by the addition of heat, and often a portion of the butter is actually turned into oil. If this is allowed, it can never be remedied, and to this may partly be traced the white lines that appear in a day or two on top of what, in all other respects, appears a good cake. In addition to which, the keeping properties of the cake are injured, as well as its flavor. The same results follow by using butter in a soft, sometimes oily, condition, as the result of summer heat, or being kept in too warm a place.

Another point to be observed is, not to add the eggs until the butter and sugar have been well and thoroughly creamed. A good creaming of butter and sugar should be smooth, light, yet solid, and when the hand, or an instrument of any kind, is run through it, the mark thus made should remain. Add the eggs at the rate of two or three to start with, and one at a time to finish with. It is also advisable to whisk up the eggs before using them.

Flavors should not be added until the last moment of creaming, as it is possible to beat out flavor by force of creaming, as to change the color of a boiling of sugar by force of pulling.

When the cream is ready and the flour added, add the sifted flour. The plan I advise is to sift the flour through the sieve on the cream, and then push the fingers down under the cream and bring them up again. Repeat this a few times and then finish mixing in the usual manner. Place it in the baking tin, level it and bake. He who can effectually mix in the flour with the least amount of stirring will be rewarded with the best results. In the baking, a cake should never be touched until sufficiently baked, so as not to suffer by the vibration caused by removing it.

My favorite mixture for a flat pound cake consists of 1¼ lb. eggs, allowing one egg extra for the shells; 1¼ lb. flour; 1 lb. butter; 1 lb. powdered sugar; and lemon flavoring.—*The Confectioners' Union.*

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Sir Howard Grubb is said to be engaged in floating telescopes on liquid supports to escape the concussion of the earth. The bumping has been such in the past as to frequently make stars look like streaks instead of dots in the photographs. Sir Howard may be on the right tack, but to the man floating home on a liquid support about 2 a. m., who sees in every star a comet, Grubb's chances seem dubious.

ADULTERATION.

FOOD ADULTERATION.

It is in order, now that Congress has adjourned and will not convene until December, that the advocates of federal legislation, for the regulation of the adulteration question to carefully work up a public sentiment by which the Paddock Pure Food Bill may be triumphantly carried through Congress and receive the President's signature. That, at least, has been the experience in the past during the years that have elapsed since a New York wholesale grocer offered a prize for an essay on food adulteration and for a draft of a bill to suppress the interstate traffic in adulterated goods, and we find that this year, as usual, the pathway of the remodeled Paddock Bill is being smoothed by the publication of reports of agents of the Department of Agriculture, prepared principally for the purpose of alarming the public on the subject of adulterations and stirring up a popular sentiment in favor of a repressive national act. This week, for example, Mr. Alex. J. Wedderburn, whose name is familiar to most of the members of the late National Pure Food Association, makes a report to the Department, in which he says, in part:

"It has been proved that adulteration is general and increasing, and that no kind of food, drugs or liquors is free from the finishing touches of the manipulators. Whether the intent be criminal and vicious or simply fraudulent, the result is the same, and the people will continue to suffer until the strong hand of federal law steps in to supplement and support the action of the States.

"The extent of adulteration is fully 15 per cent, of which 2 per cent is of a character injurious to health. But to furnish 65,000,000 people with food, drink and drugs costs not less than $6,760,000,000, and it is found that the amount of adulteration reaches the immense sum of $1,014,000,000 annually. As at least 2 per cent of the whole is deleterious to health, $135,200,000 constitutes the annual amount paid by the American people for sacrifice of their lives or injury of their health. As there exists no more serious or exhaustive drain upon the resources of the people than the adulteration of their food and drug products, the federal government should enact a law to prevent the transportation of misbranded, poisonous or deleterious food and drug products from one State or Territory into another, not interfering with the police powers of the State. This being done, the various State laws would become effective, and by systematic effort on the part of officials or honest dealers and manufacturers adulterations would be reduced to a minimum and millions of dollars saved annually to the country. The cost of execution of such a law would be moderate, and should be borne by the manufacturers of food and drug products."

The foregoing has been submitted to several of the ex-members of the pure food association mentioned above, and we regret to say that in each case Mr. Wedderburn's conclusions have been received with derision. His veracity does not, it would appear, stand very high among the people who contributed funds for one of the special agent's campaigns against impure food. We feel certain that he has overestimated the value of the adulterated products of the food-producing trades, also the percentage of the whole which is deleterious to health. It is mere guesswork, and which the present writer or any or all his readers is quite as competent to indulge in as Mr. Wedderburn himself. It is fitting that "mouldy old humbug," the Paddock Bill, should be buttressed and fortified by evidence from such a source as that which we have quoted from above.—*Merchants' Review.*

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ADULTERATION OF COFFEE.

HOW THE "FAKE" BEAN IS MANUFACTURED FOR USE.

Every once in a while a Philadelphia paper comes out with an article on the fake coffee bean—a subject discussed in these columns years ago. We do not believe there is a particle of this bogus whole coffee imitation bean used in Boston. An attempt was made to introduce it here several years ago but it failed—New England grocers are too honest to engage in such business. The latest Philadelphia emanation is as follows:

The adulteration of food in these days of keen competition and cheap production has given rise to a peculiar industry, which in spite of its claim of legitimacy, is enshrouded with nearly as much mystery as the work of the alchemist in the dark ages. The new industry is the manufacture of coffee compound or artificial coffee.

The "compound" is manufactured in the shape of coffee beans, made to imitate as closely as possible the natural article. It is sold to wholesale dealers and is mixed with the commoner grades of coffee. The bogus coffee is sold at about one third the price of the natural product, and this allows a big margin of profit when the "compound" is mixed with the genuine article. Molasses, rye flour, chickory and other ingredients enter into the composition of the bogus coffee, and it is claimed that it contains nothing injurious to health. The secret of the preparation, however, is jealously guarded.

The manufacture of the bogus coffeeberry is commenced on the third floor of the factory, otherwise known as the mixing room. At one end of a big room a huge tub is located, where the different ingredients are thoroughly beaten up—the mixture looking very much like children's mud pie batter. It is next placed in a sort of grinding machine, over which a young girl presides. Her work is to see that the preparation is thoroughly ground, and to look after the long brick shaped cakes as they come from the machine.

The putty like substance is now ready for the next machine, which merely rolls it out in thin sheets, similar to pie crust. A third contrivance cuts these sheets into long narrow strips about an inch in width.

Up to this point the composition has not the slightest resemblance to coffee. It tastes very strongly of molasses, and is slightly bitter. The next process is the stamping of the long strips into beans. The machinery that does this work is very intricate. There are a number of wheels, about six inches in diameter, and encircled by a brass band. At even intervals there are indications just the size and shape of the convex side of the coffee bean. The flat, grooved side of the coffee bean is formed by another brass-banded wheel stamped in a similar fashion.

The long thin strips are run into this machine and are divided by knives into two or three strips, the exact width of the bean. In running through the wheels the beans are stamped out with bewildering rapidity, falling into square sieves placed directly beneath the machine.

The beans are carried to the floor beneath, where the drying room is located. A long double tier of closets extends from one end of this room to the other. Inside of these closets are steam pipes. The sieves containing the stamped coffee beans are placed in the closets and the steam is turned on. One hundred and thirty degrees is the temperature required, and the bean is left for several hours to thoroughly dry.

The bean is, of course, still very rough, and would easily be detected as spurious were it not smoothed down.

For this process a dozen revolving sieves are required. The bean is taken from drying closets and dumped into the sieves, and is smoothed and polished by friction. In the bottom of each sieve there is a funnel-shaped trap through which the beans fall into a receptacle on the floor below.

The compound now tastes like coffee, and were it not for a slight molasses flavor it would be almost impossible to distinguish it from Nature's product. The final process is to roast the bean in the same manner as the genuine article. Any desired shade can be obtained in roasting, thus imitating the various brands of coffee. The entire process of manufacture occupies about two days.—*N. E. Grocer.*

HYGIENIC.

COFFEE AND COCOA.

A NEW METHOD OF PREPARING COCOA AND COFFEE AND ITS SANITARY IMPORT.

(Communicated by Professor Dr. A. Stutzer, in Bonn.)

Almost all populations of the earth experience a necessity of taking some stimulating beverage, having an exciting action on the nerves. Europeans use coffee, tea, cocoa. In addition to these three, other populations have recourse to mate and to the leaves of the coffee tree.

All these substances are distinguished by the property of containing a certain chemical agent which influences the nervous system and which we call caffein, thein and theobromin. The stimulating properties of these substances, however, are materially dependent on various other components.

Tea-leaves are imported in ready condition and we usually select for our daily consumption classes of tea which, with adequate price, are most in harmony with our acquired taste. The same class of tea, bought of the same dealer, is much less liable to vary in its taste as considerably as coffee and cocoa.

Coffee and cocoa-beans are imported in raw condition and then roasted, the roasting process having a material influence on taste and ulterior action of the beverages prepared from them.

It is obvious that the quality of the raw beans, the methods followed in their production, their maturity, the climatic conditions under which they have grown, etc., are of very great importance, which finds its expression in the prices paid for the raw coffee and cocoa-beans. Our present investigation will be exclusively devoted to the ulterior manipulations of coffee and coco-beans, for the purpose of demonstrating that the roasting methods hitherto used are not without some serious defects. In very recent times technical efforts have succeeded in inventing a new process of roasting by which the substances wasted are obtained in materially improved qualities. A more detailed account of this invention will be given later.

COCOA.

The object of cocoa-beans consist of a thin, ligneous shell and a kernel rich in fat. The cocoa beans are first roasted in separate apparatus. In this way the lignous shell is reduced to a brittle condition which facilitates its separation from the kernel inside. At the same time the peculiar cocoa aroma is developed by this roasting process. After removing the almost valueless shells the roasted beans are ground, and by means of heated rollers converted into an exceedingly fine pulpy mass. This mass with an addition of sugar and spices serves for the manufacture of chocolate.

If we wish to have "oilless" or "powdered" cocoa, the pulpy mass is carried to a hydraulic press, where part of the "cocoa butter" flows off in liquid state, while the remaining part, which is left in the press, is ground once more, then sifted and thus delivered to commerce. These are the essential features of cocoa manufacture. We should not omit to point out the inconveniences of this procss, as far as they concern consumers.

The roasting is, as pointed out, to impart to the ligneous shells a more brittle consistence, so as to render them more easily separable from the kernel inside.

Moreover, a perfect development of the peculiar cocoa aroma and removal of the raw taste of the beans is intended. All the roasting apparatus hitherto in use presented the principal defect of a very prolonged roasting at a comparatively low temperature and of not providing for a sufficient removal of the empyreumatic products resulting from decomposition of the cocoa-beans. The consequence was that the coco aroma was partly volatilized by prolonged heating, while empyreumatic substances of unpleasant taste remained in the cocoa to the great disadvantage of its quality.

Cocoa-beans which are first roasted and then powdered are subjected to a process whose alleged object is to render them more soluble. This does not mean that cocoa powder, even after the finest grinding and sifting, becomes actually soluble in water to any considerable degree. Infusion of boiling water or short ebullition only enables the powder to remain for a while evenly divided in the liquid, without forming immediately a sediment at the bottom. But the much heralded "solubility" being simply impossible on account of the fatty matter remaining in the cocoa powder in spite of all the mechanical processes, grinding, rolling and sifting, employed, manufacturers have availed themselves of chemical processes for the purpose of rendering cocoa powder easily soluble, as far as appearances go. Dutch manufacturers add potash to their cocoa. German manufacturers hitherto used ammonia very generally. Yet, the only result of these processes is to make the liquid appear turbid to the eye of the consumer, without effecting a real solution of the cocoa substances. This artificial manipulation for the purpose of so-called solubility is therefore more or less inspired by deception and always takes place at the cost of purity, pleasant taste, useful action and aromatic flavor. The treatment of cocoa by such chemical means is entirely objectionable, if it were but for the reason that the precious natural aroma of the cocoa bean, after having been impaired considerably by the usual roasting process, is still more deteriorated by the chemical additions in question. Cocoa treated with potash or ammonia would be entirely unsalable but for the supplementary addition of artificial flavors by which a poor substitute for the aroma driven out into the air is offered to the consumer. Numerous formulæ for the preparation of such perfumes are in extended use and the several manufacturers guard these prescriptions jealously from the eye of intruders. Mixtures of cinnamon, cloves, vanilla, bitter almonds, bonzoe, different ethereal oils, etc., are used for this purpose. These artificial mixtures have by no means a favorable action on the gustatory nerves, and, as a rule, a consumer is unable to continue for a longer time the daily use of the same chocolate prepared in this way. The housewife praises at one time such a brand as the very best, at another time some other brand, because the consumer feels the necessity of taking from time to time a cocoa differently perfumed.

Cocoa is not among the easily digestible aliments. It is well known that a good cup of cocoa induces a sensation of satiety. This sensation usually continues for some time, and the efforts of manufacturers should be directed toward increased digestibility of cocoa. Yet the accustomed long roasting of the raw beans produces, inasmuch as the important albuminous substances are concerned, exactly the reverse of the desirable effect. The albuminous substances are rendered less digestible. The color of cocoa powder offers important criteria for answering the question whether the roasting process has been continued too long. A good cocoa should be of rather light color. The more the beans have been roasted and the greater the quantity of chemicals added, the darker the color will be. The various classes of raw cocoa-beans have much less influence on the color of the finished product than their mode of treatment in the manufactures.

A radical improvement in this respect has been accomplished by the new Salomon roasting method, the apparatus for which have been constructed under privilege of patent. With an easy and accurate temperature the roasting process is performed in a time materially shorter than heretofore. The empyreumatic substances contained in the cocoa-beans are separated from the aromatic components of an appropriate sudden increase or decrease of temperature at certain determined moments of the roasting process, to be separated and eliminated right away, while the fully developed natural aroma is alone left in the roasted beans.

As the former methods necessitated an addition of other substances, the possibility of preparing henceforth cocoa powder in a perfectly pure condition, unaltered by an addition of chemicals, should be welcomed as a decisive progress.

In *Zeitschrift fur Angewandte Chemie*, 1891, I have published more detailed information on this subject.

COFFEE.

Coffee is generally of more interest than cocoa. There was a time when consumers used to buy raw coffee beans and had them roasted at home. In the households of our larger cities there is scarcely to be found a "coffee roaster" in our days. Wherever they are used, frequent complaints are heard about burning, smoky taste, coaling, defective arrangement of the roaster, molestation by heat and smoke, and the like.

All these circumstances cause an increased buying of roasted coffee in comparison with raw coffee.

Unfortunately, in the wholesale roasting of coffee an abuse has generally obtained in recent times which is by no means to the advantage of consumers; I refer to the process of roasting coffee under addition of sugar. By this habit the general public suffers the great prejudice of buying burned sugar (so-called caramel) at the same price of coffee and of having the qualities of inferior coffee possibly disguised in part by the strong taste of burned sugar.

This method could not well be regarded as an adulteration. The seller admits openly the addition of sugar, and the public knows that the highly lustrous coffee-beans, sharing a black coating, have been roasted with sugar.

Yet there is a certain deception in the fact that the manufacturer of this class of roasted coffee pretends that an addition of sugar is necessary in order to protect the aroma of coffee from volatilization and to increase the richness of the coffee.

In *Zeitschrift fur Angewandte Chemie*, as well as in other publications, I have repeatedly and abundantly demonstrated that the deception practiced on the public by the coffee dealer in this "sugared" coffee business, is mostly unconscious as far as "aroma" is concerned, but is perfectly conscious in the point of "richness" and consequent practical availability.

Until lately, there was no definite notion about the development of the aroma. It is only by the above-mentioned new roasting process, discovered by Salomon, and by the apparatuses described as constructed for the roasting of cocoa, that the question has been clearly defined and at the same time elucidated by further important observations.

In coffee roasting first empyreumatic gases of acid reaction are developed. As soon as the production of the real aroma begins, the reaction of the gases becomes alkaline.

The task of an appropriate roasting method consists in removing the unpleasant empyreumatic substances before the aroma begins to develop. Such a separation was impossible with the roasting apparatus hitherto in use.

I refrain from repeating the detailed accounts published by me on this subject in *Zeitschrift fur Angewandte Chemie*, 1891, and I limit myself to the conclusions arrived at. By this new roasting method all coffee without additions attains not merely a materially finer aroma and a much better taste than it was possible, by former roastsng processess or other means, to obtain from the same raw coffee—its richness (extract value) is considerably increased at the same time. The latter exceed in the various classes the corresponding values of coffee roasted after the old method by about 25 per cent on the average.

A remarkable property presented by these coffees roasted after the new method in a hygienic point of view, should not remain unnoticed.

Persons who have to perform more intellectual work in proportion, often complain that coffee, especially in the morning, does not agree with them. After taking their coffee they have a sensation of repletion in the stomach; the nerves and the faculty of thinking are decidedly more sluggish than after tea, whose consumption may be on the increase among the so-called "better classes" for this very reason. This unfavorable effect of coffee, according to the unanimous opinion of persons peculiarly sensitive in this respect, is not noticed whenever it has been roasted after the new method.

I tried to ascertain whether, as frequently asserted, coffee has a retarding action on the digestive function of the stomach, and whether this unfavorable action, if it exists at all, is influenced by the method of roasting. We used an inferior class of Santos coffee and had part of it (25 kg) roasted after the old method without addition of sugar, and another part (25 kg) was roasted in the new apparatuses. Of the ground coffee an infusion was taken with boiling water in the usual way and after a quarter of an hour it was filtered. For each 10 g. coffee 150 ccm. boiling water were used. The experiments resulted in the surprising fact that neither the one nor the other infusion had any disturbing action on the digestive fluid present in the stomach. Provided the stomach contains the digestive fluid in sufficient quantity, coffee will not interfere in the least with the continued progress of digestion.

The real action of coffee of the kind mentioned above might therefore merely consist in an irritation of certain nerves, in which case it would be perfectly supposable that the empyreumatic substances developed in roasting and having an unpleasant, acrid odor and taste, act on our nerves in a way quite different from the action of the pure, and to our senses pleasant, coffee aroma.

It is an undeniable fact that in all hitherto known roasting methods the empyreumatic oils and substances are scarcely or very imperfectly removed from the coffee beans, and that the aromatic substances are not adequately developed and are even partially redecomposed, while by the new method a complete separation and removal of all empyreumatic products from the aromatic components is accomplished. These circumstances will go far to explain why the one kind of coffee "agrees" better with us than another kind, and that the method of roasting plays a very important part in this respect.—*Centralblatt fur Allgemeine Gesundheitspflege.*

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SOME PECULIARITIES OF WATER.

BY J. J. STEWART, B.A. CANTAB, B.SC. LOND.

It is a common saying that the greatest blessings we enjoy cost us nothing. This is especially true of those two main factors which produce health—fresh air and pure water. We can imagine the demand there would be for clear pure water, and the way in which it would be appreciated if it were as rare and costly as wine. Not only is it lightly valued, but many intelligent people know very little about the nature of water. I propose, therefore, to say something about this well-known substance, which yet remains to many people so much unknown.

Water in many ways stands alone as perhaps the most singular of all substances studied by students of physics. To illustrate this, let us first consider the manner in which water behaves when it is heated. Take some ice-cold water—that is, water at the temperature of 0° Centigrade (or 32° on Fahrenheit's scale)—and gradually heat it. It will be found that instead of expanding when it grows hotter, as nearly all solids and liquids do, it contracts; in other words, its density increases as the heat is applied, until its temperature rises to 4° C. It has now reached the temperature at which its density is greatest, and after this it begins to expand like an ordinary substance, slower at first and more quickly afterward, till it reaches the temperature of 100° C. (or 212° F.), the boiling point of water; when, however much it is heated, it grows no hotter, all the heat being used in changing the water into steam, that is, in separating the molecules or minute particles of the liquid water to such a distance apart that it becomes a gas, and then exists as steam at a temperature of 100° C. As is well known, the heat required to turn one pound of water at 100° C. into steam at the same temperature is as much as is required to raise the temperature of five hundred and thirty-six pounds of water through 1° C.

This peculiarity of water, that it at first gets heavier when it is heated from the freezing point, makes a very great difference to the inhabitants of the earth, for if water conducted itself as other liquids, consider what would happen to lakes and sheets of water in winter. As the surface of the water was cooled down by contact with the frosty air the topmost layer would grow heavier and sink to the bottom, while its place would be supplied by warmer water from below, and this would go on till the whole of the water in the lake attained the freezing point and then it would freeze from top to bottom, producing a great mass of ice which would take a long time to melt. What actually happens is as follows: The water gets colder at the top and therefore heavier and sinks till the temperature of 4° C. throughout the whole mass is arrived at. Then as the surface layers cool still further they become lighter than those below, and therefore do not sink, but remain at the top till they fall to 0° C., or freezing point, and then change into solid ice. In this way a crust of immovable ice is formed on the top, while the water below it may be somewhat higher in temperature than the freezing point, and as ice is a bad conductor and it cannot sink downward, the heat escapes but slowly from the water underneath, which is thus preserved from freezing. The result of all this is that we enjoy a temperate climate. If the lakes froze throughout, the fish would all be killed, and summer heat might scarcely suffice to melt the masses of ice which would remain at the bottom while only the surface water was warmed.

Most substances occupy a less space in the solid than in the liquid state; some, however, expand on solidifying, and water belongs to the second and smaller class. An obvious result of this i that ice floats on the top of water, and another result known to us all is that when water freeze in a pipe, the force with which it expands on changing to its solid condition is very apt to burst the pipe, with effects which are often unpleasant on the arrival of the thaw. This expanding force is of extraordinary magnitude and hollow bombs made of strong and thick meta have been burst by being first filled with wate and then thrown out into the open air on a frosty day. When this was done, after a time th metal balls were heard to explode with a repor like that of a gun, and the contents forced themselves out in the form of ice.

Substances which, like water, expand whe they freeze have their freezing point lowered b pressure. So water when exposed to great pressure freezes at a temperature below 0 degrees C —that is, it remains liquid, even although it ha fallen below the point at which in ordinary ci cumstances it turns solid. This lowering of th freezing point is but small; for an increase c pressure of one atmosphere—that is, about fou teen pounds on the square inch—the lowering i 0.0075 degrees C., or roughly speaking, under th pressure of one ton weight per square inch ic melts at one degree Centigrade under its ordina ry melting point. The pressure of one atmo sphere—that is, the pressure of the air above t —is equal to the pressure of thirty-two feet c water; therefore, at a depth of about thirty-tw feet in the sea, or in a lake, the pressure is tw atmospheres. Now at great depths in the sea th pressure at which the water there exists is muc increased, and thus its freezing point is lowere Besides this, the presence of the salts dissolve in sea water causes its freezing point to b lower.

The fact that the freezing point of water lowered by pressure has an important bearing o the phenomena of glacier action. If a piece c wire be slung over a block of ice and weigh suspended at the ends, it is found on looking a the ice after a time that the wire has penetrate into it, and if the block be left with the weighte wire pressing against it, in course of time the wire will be seen to have made its way completely through the ice. But the block will not be divided in two by this process; the ice closes together again behind the wire, and at the end remains as before, a solid block, with perhaps a line of bubbles marking the course taken by the wire through it. This peculiar behavior of the ice is called relegation, and may be explained by the lowering of the temperature of freezing produced by pressure. Under the wire there is an increased pressure so that the ice melts, but the water thus formed is below the freezing point, so that it at once becomes ice again behind the wire. Similarly broken pieces of ice near its melting point can be squeezed together in a press so as to form a solid block.

Effects like this occur in glaciers. Under pressure at certain points the ice is melted; thus water, occupying less bulk, is formed and the pressure at the particular point is relieved, being passed on to another portion of the mass. But the water formed, being lower in temperature than the surrounding ice, almost immediately resolidifies. Thus the ice behaves as if it had plasticity and was a viscous solid, like wax.

It has also been suggested that ice does not melt suddenly at one particular temperature, but passes through an intermediate viscous state, and that there is a continuous change of temperature from that of cold, hard ice to liquid water; ice thus behaving like a substance such as parafin wax, which gradually melts, passing through a viscid condition, though in ice the change is much more rapid. If this is so, we can understand why two pieces near the melting point, when placed together, should unite in one block even without pressure, for the hard ice would be at a lower temperature than the surface layer of water between the two pieces of ice, and the latter would therefore soon solidify.

This curious property of ice under pressure accounts for the readiness with which snowballs can be made by squeezing in the hands. When the snow is considerably below the freezing point the manufacture of snowballs becomes more difficult, and does not take place till the snow is somewhat warmed by the hands.

Another peculiarity of water is that it is less conpressible at high temperatures than at low. In winter it is more readily reduced in bulk than in summer. This is contrary to the behavior of most liquids at ordinary temperatures, such as alcohol or ether, whose compressibility is increased by a rise of temperature.

In an account of the behavior of water mention must be made of what is known as capillary phenomena. When the end of a tube with a fine bore is plunged beneath the surface in a basin of water, it is noticed that the water rises in the tube and stands at a higher level than that of the water surface in the basin. Also when water is sprinkled on a surface which it does not wet, such as velvet, it does not spread over the surface, but stands in isolated beads or drops. In fact, water behaves as if it were surrounded by a contractile skin, and a drop of water may be roughly compared to a fluid contained in an elastic India rubber bag. This peculiarity in the surface layer of water is called superficial tension, and its amount may be measured by noting the height to which water rises in a tube of known diameter, for the tension round the circumference of the top of the column of water balances the weight of water raised. It may be also measured by observations on the dition of the particles in the surface layer of the water, which on the side next the free air are not size of globules explained by the different con- under the attraction of other water particles, and so differ from the particles in the midst of the water, which are surrounded on all sides by their neighbors and exposed equally all round to their attraction. It is owing to this surface tension that the pressure inside a soap bubble is greater than the pressure of the atmosphere outside. The velocity of small ripples on the surface of a smooth pond depends on the superficial tension, while the behavior of large waves is controlled by gravity.

The passage of water along the pores of the rocks is much facilitated by this capillary action, and has important consequences in the geological effects produced. Water is thus able to penetrate deep down through the crevices of rock, even against considerable pressure exerted against it by steam, and changes in the structure of the rocks are produced by the contained water when under pressure and raised in temperature in the interior of the earth's crust.

By application of great pressure the temperature of vaporization of water may be much raised, and thus superheated water has been shown to have considerably augmented chemical activity, and to be able to dissolve and alter glass. The importance of this in the explanation of geological processes is obvious when we consider he great quantity of interstitial water contained in all the rocks of the earth's crust.

What the exact constitution of water or any other liquid is still remains very much a mystery. The molecules or particles of the liquid seem to be able to move about with considerable freedom, but when it becomes solid their position is much more fixed. Why water stuff should occupy a greater space in the solid than in the liquid state no one has been able to explain. One peculiarity of water particles we can observe when we see them in the form of snow, and that is that they arrange themselves in crystals of the hexagonal system. This is well shown in the beautiful minute six-rayed stars of various shapes which are to be seen in freshly fallen show.

Water boils when the pressure of its vapor produced by heating just exceeds the pressure of its external atmosphere. Thus the temperature at which boiling takes place depends on the atmospheric pressure, and, as is well known, is lower on the top of a mountain than at its base, so that cooking operations become more difficult at a high-lying place such as Quito on the Andes. Also from this cause the temperature of boiling water is less when the barometer is low. Thus we see that while the melting point of ice is lowered by pressure, the point of vaporization of water is raised by increasing the pressure. The law is that when a substance contracts on changing its state, as ice does on becoming water, the temperature at which the change occurs is lowered by pressure; when the change of state is accompanied by expansion, as when water becomes steam, the effect of pressure is to raise the temperature at which the change takes place. An interesting and readily performed experiment on the effect of pressure on the boiling point is the following: Boil some water in a flask; while boiling is going on, cork the flask and remove the source of heat: when the glass vessel has somewhat cooled down, squeeze a sponge saturated with cold water over the flask, and boiling will be seen to recommence. This is owing to the fact that the sudden application of the cold water outside condenses the vapor above the hot water within, so that bubbles of vapor can be again formed in the liquid and boiling is renewed.

Water consists of the two gases, oxygen and hydrogen, combined together, and it may b decomposed into its elements. If a current of electricity from a battery consisting of several voltaic cells be sent between two plates of platinum placed opposite each other in a vessel of water, bubbles of gas will be observed to rise from the plates while the current passes; these are produced by the splitting up of the water particles. and in course of time the whole of the water may be thus changed into its constituent gases. By collecting the gas given off at the plates in separate jars, it is found that the gas set free at one plate consists of hydrogen, while that collected at the other plate is oxygen, and that the volume of the hydrogen is almost exactly double that of the oxygen. Thus water consists of two volumes of hydrogen combined with one volume of oxygen, and if the combination takes place at a temperature above the boiling point of water it is found that the volume of steam produced is two-thirds that of the united volumes of the two gases. By placing hydrogen and oxygen gases together in a jar, in the proportion by volume of two to one, and then bringing the mouth of the jar to a flame, a loud explosion occurs; the gases have combined together, and the sides of the vessel are seen to be covered with a dew of condensed drops of water.—*Knowledge.*

INVENTIONS, SCIENCE, ETC.

HOW TALC IS UTILIZED.

IT IS SIMPLY A VERY SUPERIOR KIND OF SOAPSTONE.

An article which is much in use everywhere, and especially in Cincinnati, is talc. Talc bears the same relationship to soapstone that marble does to limestone: that is, it is a very superior kind of soapstone, just as marble is a superior kind of limestone, the superiority being so marked that it is, except in the eye of the geologist, an entirely different article.

There are several different sorts of talc, gray, yellow, white and fibrous. Fibrous talc is found chiefly in New York State, and is used chiefly in the manufacture of paper. All talc is absolutely fireproof, and is, therefore, extremely valuable for the manufacture of non-combustible wall papers, paper window curtains, &c. Powdered talc is made from the ordinary talc which is found in France, Italy, North Carolina, Georgia and Alabama. This sort of talc is used largely by soap factories as a filler for the cheaper grades of soap.

Even in its crude state it has a very oily "feel," and is one of the best lubricants known. When mixed with the commoner grades of soap it renders them as pleasant to the touch as the most expensive brands, and renders the skin smooth and soft, although it has no cleansing qualities whatever.

Of late years talc has been largely used in the manufacture of patent wall plaster. A little talc mixed in the plaster gives a smooth, glossy finish to the walls and ceiling of a room which no other substance will produce. Several years ago a party of Cincinnati capitalists invested quite largely in the talc mines of North Carolina and have since reaped quite a neat sum annually from the output. The mining of talc is a very inexpensive operation, as it is in its crude state so soft that it can be easily loosened from the vein with ordinary pickaxes and shovels.

Its scarcity and usefulness, of course, make it very valuable, hence the profit to the mine operators is great. More than one car load of crude talc has been sold in Cincinnati for $600.

The best talc found in America, and perhaps in the world, is found in mines near Kinsey, Cherokee county, N. C. These mines are owned by Cincinatti capitalists, and a large portion of their annual output is consumed by Cincinnati manufacturers.

One common use to which talc is put is the manufacture of infant powders. Talc powder is so exquisitely soft and fine-grained that it softens the skin of the reddest, tenderest baby, and, by reason of lubricating properties, it prevents chafing or irritation of any sort, absorbing all greasy fluids which gather in the folds of flesh which predominate in chubby darlings, thus preventing prickly heat and other baby skin troubles.

Talc is largely used in Cincinnati foundries for foundry facings, being fireproof. Talc powder is invaluable for this purpose. For the benefit of some it may be well to state that by "foundry facing" is meant the substance used to mould metal in. For example, when a casting is to be made an impression is first made in a box of fine sand with a mould "form." This indentation is then filled with talc powder, which is again indented with the mould. The result is that the last indenture has a lining of fireproof talc, which prevents the molten metal from burning the surrounding sand or turning it to glass, and at the same time gives the casting a smooth, polished surface.

Talc is also used by India rubber manufacturers to soften their output and to render it pliable and less liable to crack.

French chalk or tailors' chalk is quite a familiar form in which talc appears before the public. It is also used in shoe stores to enable vain people to slip on a No. 10 foot into a No. 2 shoe. Stove fitters also make use of it with great success.

An analysis of a perfect specimen of talc gives the following result: Water, 4.65; silica, 62.50; magnesia, 31.20; iron oxide, 0.82; alumina, 0.51; calcium, a trace, and of manganese, a trace. Total, 99.68.

One use by which the article can be conveniently put by housekeepers is in removing grease spots from clothing. Take a little pure powder and sprinkle it upon the toughest, stickiest sort of grease spot, put a piece of blotting paper over this and a hot iron on top of the blotting paper, and the most unsightly grease spot that ever spotted a summer suit will come out as if it wanted to.

Previous to the discovery of fire brick, talc was very generally used to line furnaces and chimney places with. The fire brick is so much less expensive than talc that since its discovery talc has been very little used for these purposes, although the fact that talc is absolutely fireproof renders it the most superior article which can be used for these purposes.

In its native mountains talc lies buried in veins which vary in extent from an inch wide to the width of an early morning sidewalk.

It lays in leaves or scales very much like slate, but is very easily sawed or chipped: although the leaves will not bend, they break and crumble very easily.

During past years hundreds of car loads of talc have been used in Cincinnati by all lines of trades, but few people knew of this strange article in its crude form. It is so exceedingly soft that it is not gritty even to the sensitive test of the human teeth, and as a complexion powder has no equal.—*Cincinnati Times-Star.*

The photograph of four generations of royalty made a flippant subject of Queen Victoria exclaim "A good hand—three kings and a queen!"

THE SAFEST PLACE IN A RAILROAD TRAIN

BY H. G. PROUT.

Any man who is supposed to know much about railroads is sure to be asked what is the safest place in a train. The question is an easy one to answer by reasoning, but the soundness of the reasoning is hard to prove.

There is no doubt as to what is the most dangerous place. That is on the locomotive. In most serious accidents to passenger trains the engine is involved.

In a butting collision two engines run together. In a rear collision, or "tail-ender," an engine runs into the rear of a standing train, or one moving more slowly. In a side collision an engine coming off a side track runs into the side of a moving or standing train; or an engine runs into a train at a crossing of two railroads.

There are variations of all these subdivisions of the collision class of accidents; but generally the engine is in the thick of the wreck.

In derailments, too, the engine goes off the track and is overturned oftener than any car simply because it is the first thing to strike the obstruction, or the broken rail, or wrecked bridge. So it follows that in passenger service the engineman and the fireman are in a position much more dangerous than that occupied by any other train hands.

In freight service this danger is somewhat less, relatively, because the brakemen must run over the tops of the moving cars. This is a most dangerous thing to do at any time, and in a snowy night, or a night when rain is freezing into sleet, it is about the most perilous thing that human beings can do for a living.

There is another place where some people ride which is even more dangerous than the engine or the top of a moving car. This is the truck frame under a freight car.

The place is frequented by persons who are neither passengers nor employes. They are not even named; but when one of them gets killed he is reported as a "tramp." When we think of the danger and horrible discomfort of a railroad journey in that place, it seems as if one would almost as soon work as travel in that way.

After a little thought one would say that the safest place in a railroad train is in the middle of one of the cars, somewhat ahead of the middle of the train. If all accidents were collisions, and all cars were of equal strength, this would be true Whether the collision is a butting one or a "tail-ender," the full force of the vehicle is felt by the vehicle which is struck first; and the force is gradually lost as it is carried forward or backward through the train, till some place is found in the train where the blow is least felt.

For example, in a case of a tail-end collision, the rear car may be smashed into kindling wood, the next one less injured, and so on to the baggage car, where the shock may be so slight that men standing there are not thrown down.

Therefore, one would think that the safest place is just in the middle of the train: but there are two reasons why the safest place is forward of the middle of the train.

The engine is so much heavier and stronger than any car that it takes up more of the shock than is absorbed by a car. On this account, if your train is run into from the front, the force of the blow cannot travel back so many feet as it can travel forward when the train is run into from the rear.

The second reason is that rear collisions outnumber butting ones nearly two to one. The records of the last eleven years show almost exactly two to one.

For crossing collisions no rule can be laid down because the train is as likely to be struck in one place as in another.

So far, then, we have proved that the safest part of a train is somewhere forward of the middle. This would be the case if all or most railroad accidents were collisions; but in fact there are about 25 per cent more of derailments than of collisions.

In a derailment, the forward part of a train is the more likely to be injured; and in this class of accidents the place of greatest safety is probably the rear car.

So, taking the average of collisions and derailments together, the safest place seems to be somewhere back of the middle car, but somewhere forward of the rear car.

As a rough guess, correct enough for practical purposes, I should say that the "safest place" is about two-thirds of the way back of the locomotive. This, however, is only a guess, and cannot be proved.

The safest car having been found, approximately, it remains to see what is the safest place in that car. This is doubtless the middle. In collisions, the injuries to persons are generally caused by "telescoping." The floor timbers of one car get tipped up so as to slide over those of the car next to it; or one car may be higher or narrower than another. The heavy framework of the higher or narrower car is driven into the other one, tearing out the seats and cutting through the light side framing.

Of course the chances of injury are more near the end that is crushed in. In derailments, too, the greatest damage to the cars is generally near the ends.

Let us see how our theory fits in with the facts. We will take only the most serious accidents of 1889 and 1890. In August, 1890, there was a derailment at Quincy, Mass., in which twenty-three persons were killed and thirty were wounded. All who were fatally injured were in one car—the fourth from the engine and the sixth from the rear. This car, while not in the position that we have shown to be the safest, was still in a relatively safe part of the train.

A derailment at Carmel, Indiana, in January, 1890, resulted in the death of six and injury of twenty-six. In this case the wrecked cars were the last three of the train—quite contrary to our theory.

On the other hand, the two accidents of 1890 next in importance to the Quincy accident go to confirm the theory. At Shoemakersville, Penn., in September, an engine and five cars went over a bank and twenty-one people were killed and thirty injured. The rear of the train stayed on the track. At Oakland, Cal., in June, the first car of a train went into an open drawbridge, and thirteen persons were drowned.

The worst accidents of 1889 also make for and against the theory. In February, at St. George, Ontario, a train went through a bridge, causing the death of twelve and the injury of twenty-six. The engine caused the wreck of the bridge but the engine and two cars went over safely, and all the harm was done in the last three cars.

At Hamilton, Ontario, in April, twenty were killed and a dozen or more injured in a derailment. The train consisted of ten cars, of which only the first four were wrecked.

The most fatal accident of the year, and one of the worst in railroad history, was near Armagh, Ireland, in June. About eighty were killed and two hundred and sixty injured. The rear ten cars of a long excursion train broke away on a grade, ran back down the hill and collided with the engine of a following train. In this case the front third of the train would have been the safest place and the rear third was the most dangerous.

If we should go back through the years, examining accident by accident, we should find that, on the whole, our theory of the safest place is fairly well confirmed; but the conditions are so extremely complicated that there are a great many exceptions to the rule.

After all, the important point to remember is that a passenger can travel on the railroads of the United States day and night, Sundays and week days, at the rate of thirty miles an hour, for one hundred and fifty years before he will be killed, and the wisest thing to do is to sit where you find the best company and the softest seat. —*Youth's Companion.*

AMONG THE RHYMERS.

"YALLER KIVERED LITERATURE."

The heroes and heroines
  In novels we have read,
Vanish in "finis" or "the end"
  When they are safely wed.

We'd like to see these brain-born folk
  Outside the "yaller" book—
Just watch 'em hustling round for grub
  By ev'ry hook and crook.

We'd like to see the "happy groom"
  Reviewing household bills,
For dry goods, beef, pork, wood, and coal,
  Soap, matches, butter, pills.

We want to see him in his home
  When stocks are out of luck,
Peruse his face and try to find
  Resemblance to a "duck."

We long to see the "blushing bride"
  When baking cake and pies,
See her when she's forgot the yeast
  And "horrid" dough won't rise.

We want to see that "rosebud mouth"
  A blowing up "the girl,"
See her when "trying on" a dress
  Or in house-cleaning whirl.

In short, we'd like to read the lives
  Of old-time married vets,
O'er whose gray heads and wrinkled brows
  The honeymoon ne'er sets.

To see a dear old married pair
  Their journey nearly done,
As lovers still walk hand in hand
  Down to the setting sun.

E. BRADSHAW *in Boston Transcript.*

We often hear that girls who sing
  Have notes like warbling bird;
How glad we are that birds ne'er try
  To sing like girls we've heard.

[*Chicago Inter Ocean.*

"What are the bugles blowin' for," said folks on parade;
"We've got the 'propriation," the tinglin' wires said:
"We've got the guv'ment buildin', an' we're goin' to go ahead,
An' we're shouting for Atlanta in the morning!"

[*Atlanta Constitution.*

He saw her in the surf's white whirl,
  He heard her cry of wild despair,
He rushed to save her, but the girl
  Was drowned: He seized her by the hair.

[*New York Press.*

The barber neatly mowed his lawn,
  And said when he was through,
"Shall I put a little seafoam on,
  Or give you a shampoo?"

[*Indianapolis Journal.*

MISCELLANEOUS.

PARIS CAFES.

A PARIS CORRESPONDENTS DESCRIPTION.

The Grand Café, an immensely ornately decorated establishment, which lies under the Jockey Club, is perhaps the most respectable in Paris. I can remember the time when it was very well frequented indeed. That was many years ago, at a time when the late Jules Grévy and many of his political friends used to frequent it for the purpose of playing chess.

The Café de la Regence is still the great rendezvous of chess players, and the best men in Europe may be seen there bending over the checkered boards. A table is shown in one of the rooms at which Napoleon the First played an historical game of chess. Amateur players do not frequent this café much, because they make a charge for the use of the chessboards.

The Café de la Paix, at the counter of the Place de l'Opera, is one of the most popular establishments of its kind in Paris. I can remember the time when it was considered very bad form to enter this place. That was not long after the war, when the café was considered to be the rendezvous of Bonapartist conspirators against the Republic. It has since then quite outlived its bad reputation, and is to-day one of the best paying properties of its kind in Europe. The society there is very mixed, and in one of the rooms some of the most disreputable people of the Boulevards may be seen. They are all well dressed, and consequently allowed to enter. As a matter of fact, a fairly respectable appearance is all the passport needed to admit a man to the best houses in Paris. This café is the one most frequented by Englishmen and Americans, but Americans do not, as a rule, seem to find much fun in sitting in a café, and parties rarely remain there more than just the time necessary to take the drinks ordered.

The Café Americain, higher up on the Boulevard, is respectable enough in the day time, though somewhat dingy looking. It is greatly frequented by journalists and men of letters, and at the "hour of absinthe" is crammed with people, the majority being press men. After 11 o'clock women are admitted, and it is transformed into a fast and loose resort. It remains open all night, though after 2 o'clock in the morning the downstairs rooms are closed and the business is conducted upstairs, where much heavier prices are charged.

The Café Riche, on the south side of the Boulevard, was once a very fashionable rendezvous. It is still one of the most Parisian of cafés, one of its best known habitués being M. Aurelien Scholl, who has dined there for the last twenty years. According to his friend, M. Sarcey, this typical Boulevardier is very difficult to please, and falls into a violent rage if his Chateaubriand is not cooked to the right point. It was this café the M de Villemessant used to frequent when he was founding the *Figaro*; and here, too, in former days, might have been seen the burly form of Alexandre Dumas the elder, who used to have an office in the neighboring Rue Lafitte.

Tortoni's, celebrated for its ices, is still highly reputed, and though it is no longer a feather in any man's cap to be seen sitting outside this house, one usually sees good people on the terrace. Some painters and not a few political men make it their house of call. Some years ago it used to be the rendezvous of the fops of the town, and it was by sitting here in the most amazing of costumes that Catulle Mendes attracted attention to himself long before he had won a name with his facile pen. This café is now in a transition stage, owing to the determination of the proprietor to retire and enjoy his *otium cum dignitate.*

The Café Anglais, of cosmopolitan renown, is situated on the Boulevard des Italiens, next to the former Opéra Comique. It is nowadays somewhat neglected by young and elegant society, and is especially frequented by great financiers, by a set of money-changers and bankers. But in old times, thirty or forty years ago, with what splendor shone the Café Anglais! and how many memories cling to it! That dining room of the first floor, the "big sixteen," has seen all the gentlemen, all the high livers, all the celebrated artists of France and foreign countries pass through it.

The cafés of Montmatre—the quarter of Paris where live a large number of artists and art students—are all more or less "artistic" in character—that is to say, their funiture and decoration differ a good deal from those of the Boulevard café. Some of the best-known artistic cafés in this quarter have been described over and over again. Who has not heard of the Chat Noir, which has put so much money into the pockets of its ingenious founder, M. Rodolphe Salis, whom I can remember as a ne'er-do-weel of the Latin quarter? Salis was clever enough to get a number of artists to work for him and build up his fortune while neglecting their own. The Chat Noir has, however, seen its best days, and though strangers still go there to see the beautiful and weird paintings of Willette and Forain, it is by no means so popular a resort as it used to be. In the upstairs rooms is a small theatre, where marionettes perform idyllic or satirical plays written by the numerous poets who are still attached to the premises.

In the former locale of the Chat Noir—that is to say, on the Boulevard Rochechouart—is Bruant's famous Mirliton Café. Bruant is a song writer of great talent, who sings his own songs to his customers. His songs are about Parisian low life, and deal with the adventures of the lowest class of women, of thieves and malefactors, and of the wretched out-casts of the great city. Some months ago this sort of thing had immense success in Paris, and one used to see song writers of the Bruant type singing in fashionable salons, engaged by wealthy hostesses to amuse their guests. The taste since then for this kind of amusement has certainly waned, but there are still enough morbid-minded people to keep Bruant's pocket filled. His café is a stuffy little hole, adorned with sinister and grotesque daubs, and the refreshments sold are both dear and bad.

Not far from Bruant's is a café called the Ra Mort, which is the rendezvous of a number of lesser lights in literature and painting. There is a table d'hôte dinner there, and on Tuesday nights this is rather well patronized.

In the Rue des Martyrs is another well-known café, the Japanese Divan. There is a concert room here, and it was on this obscure stage that Madame Yvette Guilbert, now the most popular music-hall singer in Paris, first made her name, not many years ago. The curious part of the establishment is downstairs, where, in a kind of cellar, is held nightly a smoking concert. The walls are painted with risky pictures, the company is rowdy, and the songs of a very "blue" character. The proprietor is a clever young man, who is rapidly making a fortune. He came to Paris some years ago without a farthing in his pocket, and started selling olives in the cafés

He used to go about with a small tub containing his wares, retailing pennyworths. Each pennyworth he wrapped up in a piece of paper, on which was printed his latest poem, the subject usually being the olive. He lived very economically, and was able to save enough money to start this place, where he is making a large annual sum.

First and foremost amongst the cafés of the Latin quarter is the Café Procope, in the Rue de l'Ancienne Comédie, which enjoys the distinction of being the oldest café in France. In a few years it will be able to celebrate its three-hundredth anniversary. It was greatly frequented by the best-known men of letters of the last century, and a table is shown at which Voltaire used to take his meals. Since then it has been patronized by whole generations of literary celebrities. To-day the *clientele* has changed, its customers being recruited from the shopkeepers in the neighborhood. The men of letters who live in the Latin quarter prefer the noisier cafés.

Not without interest of a certain kind are the notorious cafés in the Rue Galande, namely, the Café du Chateau Rouge and Père Lunette's. The first-named is the typical Parisian "dive," and is frequented by the lowest outcasts of the city. It is in a courtyard off the Rue Galande, in a house which was once the abode of the beautiful Gabrielle d'Estrees. It is chiefly used as a temporary refuge by people who have no abode, and who go there to sleep on the benches and tables as long as the house remains open. This they are allowed to do after spending a small sum on a drink.

On entering, one sees scores of men and women, many with little children, bending over the dirty, wine-stained tables, snatching a few hours of alcoholic sleep, until, on the closing of the house, they shall be turned out into the street to wander about all night. In this room is an immense zinc counter, behind which stands a burly ruffian in a red jersey. The drinks dispensed are of the worst kind, and the brandy especially is vile. The better class of customers sit in an inner room, similarly fitted with dirty, wooden tables. Here one may see as hideous a collection of thieves and professional beggars, with the lowest class of women kind, as Eugène Sue ever immagined. Upstairs there is a room known as the "Corpse's Room," where outcasts are allowed to sleep on the floor and tables until closing time. It is supposed to be a sight, and visitors usually ask to be taken upstairs to see it. There is really nothing to see but a squalid mass of filthy and ragged wretches, lying each in a different position of drunken and uncomfortable sleep.

PRINTING THE NEWS AHEAD OF TIME.

On May 22, at about 8 p.m., a dispatch dated Melbourne, Australia, May 23, was received at the newspaper offices announcing that Deeming, the murderer, was hanged at about 10 a.m. This was startling intelligence. Here, apparently, was the information of the occurrence of an event fourteen hours before it could have happened. It was Sunday night with us, about an hour after sunset, when the news came; it was Monday forenoon, several hours after sunrise, when the news was sent, and the news had to go half way around the globe before reaching us.

But how or why does this seeming break in the orderly course of the calendar occur? This is all very simple when the causes are known. There was nothing the matter with the calendar. The affair occurred just as reported, and the variation or disagreement in the time is due merely in the difference in longitude between the two places.

By common consent of the Nations, longitude on the globe is reckoned from Greenwich, England. The prime meridian is considered to be at that point. Melbourne is, in round figures, 145 degrees east of Greenwich, and St. Louis is 90 degrees west of Greenwich—that is, in passing along the globe westward from Melbourne to St. Louis 215 degrees of longitude are traversed. Each fifteen degrees constitute an hour in time. The earth makes a complete revolution from west to east through 360 degrees in twenty-four hours. In each hour therefore it turns fifteen degrees. Places fifteen degrees east of us see the sun an hour before we do. Places ninety degrees east of us see it six hours before we do, and so on. The sunrise, noon, sunset and all other hours come to these places, as a consequence, earlier than they do to us. The present hour of the day to the inhabitants of St. Louis, whatever the hour may be, came to the inhabitants of Melbourne about fifteen and two-third hours ago. To places west of us this order of things, of course, is reversed.

But at what part of the globe does the day begin? This was a problem which once bothered the scientists. The sun is rising in some part or other of the globe; the sun is always setting or on the meridian. Therefore it is daylight always somewhere. Yet it was necessary to select a conventional starting point for the day. It was desirable, too, that the place of transition should be in the ocean. At last the chief countries of the world agreed that the change of the day should take place along a line drawn nearly north and south through the Pacific Ocean. This is called the date line. Under this arrangement the new day is considered to make its advent on Easter Island. This island is west of Chili, and about a third of the distance between that

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THE STANDARD EMULSION OF COD LIVER OIL THROUGHOUT THE WORLD.

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Having much greater remedial power than the crude Cod Liver Oil, without any of its nauseating effects.

Its PALATABLENESS, EASE OF DIGESTION, and long tolerance by most sensitive stomachs as well as its reliable therapeutic effect, has given it special favor with the medical Profession, and receives their unqualified endorsement and support.

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Samples will be sent free except express charges to any wishing to try this preparation. For sale by all druggists.

SCOTT & BOWNE, New York.

country and New Zealand. Thus, when it is Sunday on the American continent, it is Monday on the Easter Island. That island and the places to the west of it along the date line always keep ahead of us one day. This is why on Sunday night in St. Louis it was Monday forenoon in Melbourne at the same instant of absolute time.

◆

FOREIGN RAILROAD RESTAURANTS.

THE LONDON CATERERS' OPINION.

Since Charles Dickens poured out the vials of his wrath on railway caterers and their refreshments, in his memorable sketch of Mugby Junction, things have greatly changed, and since the advent of Spiers & Pond it has been possible to obtain fair if not ideal eatables and drinkables at railway buffets and refreshment rooms. The restaurant on wheels has been introduced too, and passengers who do not mind paying for such accommodations can now dine in sumptuously equipped cars while en route to their destination. In America the dining car is more of an institution than with us, and excellent dinners are served there at moderate prices. We are reminded of this by the receipt of a printed bill of fare of the Wagner Palace Car Company, who have organized a first-rate refreshment service on the New York Central. We reprint the menu of the one dollar dinner, as well as the wine list from which travellers on the iron road may make their selections:—

Then follows a copy of the menu of a Wagner dining car with which our readers are familiar, but which evidently needed no comment from our English contemporary.

It is a long cry from America to Russia, where railroad refreshments are served in somewhat primitive style. The people seem to eat at every station, and the beauty of it is one can find something good to eat every time the train stops. The favorite soup is called stachee, and it is made of cabbage and other vegetables with a piece of meat four inches square and two inches thick in the middle of it. In addition to this they bring you a bowl of thick cream, which is sometimes sour and sometimes fresh, to pour into it in order to give it a body, and this molasses-like mixture one is expected to eat, and does so, finding it by no means bad. The trains usually make long stops at the stations, and from thirty to forty minutes for a dinner is not uncommon. At every station peddlers came around with fruits, cakes, and drinkables, and a common sight is the old fellow with the samovar in which he makes tea, and serves to all who will buy. It makes no difference how hot it is, this man always wears his overcoat, and a long visored cap usually shrouds his eyes. His tea is good, and he serves it with a bit of lemon and a lump of phenomenally hard sugar.

The Swedish mode of catering for travellers presupposes extraordinary gorging powers, as will be understood from the following account of an English voyager who tested it:—We were warned at the door that everyone entering the restaurant would have to pay two kroner (2s. 2 1-2d.) whether he ate as much as he was able or ate nothing at all. There was an appalling rush for victuals and drink.

For the two kroner one had the run of all that was displayed with Homeric plenteousness on a long and wide central table and on a great buffet. The variety of victuals and drink was infinite. What were there? Soupes a la francaise and a la suedoise, native whets to appetite (*delicatessen*) including caviare, anchovies, sliced tongue and sausages, smoked salmon, smoked goose, and cucumbers flavored with aniseed. The fish division included lobsters, salmon, boiled and grilled pike, and salmon trout. Poached eggs lay on "beds of cooked spinach. Basins full of salad were placed upon the dishes of roast beef, veal, and fowl, the latter of some diminutive breed. Besides these there were pies, puddings, jams, cranberry compotes, pan and oven cakes, sweet omelets, and, lastly, wood strawberries with whipped cream. The coffee was equal to Ledoyen's in Paris, but there was no time to drink it unless one scalded one's throat. Knives, forks and plates were laid in heaps on the central table. Beverages were sold at cost prices. Round the room stood small tables with nothing but table cloths on them. One helped one's self as one pleased, and ate as one could.

This is what an "old soldier" would do in a Swedish railway restaurant. If with a party he would appoint himself its general, directing one of his friends to pounce upon as many chairs as were wanted and set them round a table, on which he was to keep guard; another would be told off to capture knives, forks and plates, to order the drinks and provide the party with glasses. His next duty would be to carry plates, soups, and viands from the big tables to the one that has been secured. The general's part would be to ladle out soup and snatch food from the big table, heaping up as much, and of as many sorts, on each plate held out to him as he could. The whole party would be thus provided for without loss of time, and could eat, in hot haste no doubt, of nearly everything.

At a railway meal in Sweden one may see as many as seven or eight sorts of viands on the same plate at the same moment, and all getting mixed. But the traveller's appetite is proverbial, and the fastidious person risks being starved. All that is offered is of the best, but having to gobble rather than to eat, one can hardly discern its good quality. The Swedes hold that this system of gorging one's self rapidly has its advantages, it enables travellers to go for a long time without further refreshment, because they cannot digest the food for many hours, and therefore cannot get hungry.

DIOVIBURNIA UTERINE, TONIC, ANTISPASMODIC AND ANODYN.

A reliable and trustworthy remedy for the relief of Dysmenorrhœa, Amenorrhœa, Menorrhagia, Leucorrhœa, Subinvolution, Threatened Abortion, Vomiting in Pregnancy and Chlorosis; directing its action to the uterine system as a general tonic and antispasmodic it is unexcelled.

FORMULA.—Every ounce represents 3-4 dram each of the fluid extracts: Viburnum Prunifolium, Viburnum Opulus, Dioscorea Villosa, Aletris Farinosa, Helonias Dioica, Mitchella Repens, Caulophyllum Thalictroides, Scutellaria Lateriflora.

ST. LOUIS, MO., June 23, 1888.

I have used DIOVIBURNIA enough to satisfy myself of its merits. It is of unquestionable benefit in painful dysmenorrhœa; it possesses antispasmodic properties which seem to be exerted especially on the uterus.

W. H. Tuholske

Professor of Surgery, Post-Graduate School.

ST. LOUIS, MO., June 18, 1888.

have given DIOVIBURNIA a fair trial, and found it useful as an uterine tonic and antispasmodic, relieving the pains of dysmenorrhœa and a regulator of the entire uterine functions. I feel authorized to give this recomendation.

L Ch Boisliniere

Professor of Obstetrics, St. Louis Medical College.

ST. LOUIS, MO., June 18, 1888.

For more than a year I have prescribed DIOVIBURNIA. In those cases that I have been able to follow up, found that they derived much benefit from its use in almost every form of dysmenorrhœa—especially the conjestive form. I am so pleased with it that I now prescribe it almost daily.

T. L. Papin M D

Physician in Chief and Gynecologist to St. John's Hospital.

ST. LOUIS, MO., June 20, 1888.

I very cheerfully give my testimony to the virtues of a combination of vegetable remedies prepared by a well known and able pharmacist of this city and known as DIOVIBURNIA. I have employed this medicine in cases of dysmenorrhœa, suppression of the catamenia, and in excessive leucorrhœa, and have been much pleased with it. I do not think its claims (as set forth in the circular accompanying it) to be at all excessive.

Professor of Principles and Practice of Medicine, St. Louis Medical College.

DOSE.—For adults, a dessertspoonful three times a day, after meals. In urgent cases, where there is much pain, dose may be given every hour or two, *always in hot water*. Put up in Eight Ounce Bottles.

To any Physician, unacquainted with the medicinal effect of Dioviburnia and Neurosine, we will mail pamphlets containing full information, suggestions, commendations of some of the most prominent professors in medicine and various methods of treatment. Or to those desiring to try Dioviburnia and Neurosine, and will pay express charges, we will send on application a trial bottle of each.

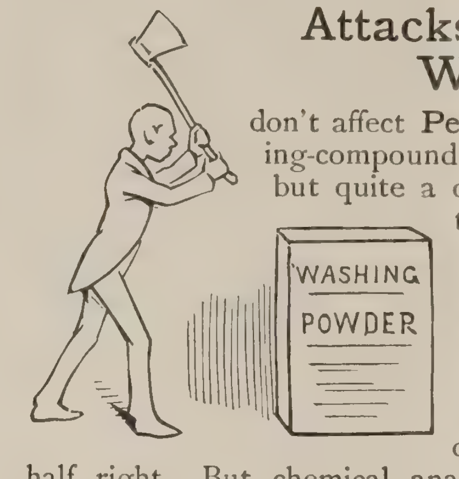
DIOS CHEMICAL COMPANY, ST. LOUIS, MO.

SEEN UNDER A MICROSCOPE.

A drop of blood, seen under a microscope of high magnifying power, presents the strange appearance of a field of colorless lymph, through which are in constant serpentine motion chains composed of numbers of pinkish discs, flattened against each other with a few white discs wandering about aimlessly among them. Those white discs (corpuscles) are by some scientists affirmed to be devourers of effete matter, but their use is much debated. In health they are only as one to 355 in proportion to the red, but in some diseases are almost in equal numbers.

There can be no doubt about the red corpuscles, however. They are so small (merely one-thirty-five-hundredth of an inch in diameter) that they glide readily through the hair-like tubes of the capillaries and reach every molecule of the body, nourishing and rebuilding all tissues of every kind. In diseased blood the chains are much broken up, so that only a few of the pink discs are to be seen clinging together, and new objects appear in the field, minute crystals of foreign matter, threads of fibrous substance which have a tendency to agglomerate into clots and particles of tissue waste. Blood presenting this latter appearance will speedily poison the entire system, entailing disease and death if its condition is not rectified by alterative medicines. The effete particles, lodging in the most minute circulatory passages, Nature will seek to cast out by a process which manifests itself in cutaneous eruptions, boils and malignant pustules, or they will seriously affect the action of the liver. Those minute crystals will make themselves agonizingly felt in kidney and bladder affections. The fibrinous threads are liable to mass themselves in embolismic clots upon the brain, or in the valves of the heart, in either case threatening immediate death.

And these are but a few of the malign effects that may come, are indeed certain to result, from vitiated blood. The most efficient remedies known in the highest development of modern medical science for such a condition are the active principles of sarsaparilla (preferably of the Honduras variety), stillingia and yellow dock. Any pharmacist may, if he has the materials, with more or less skill, compound them; but inasmuch as the world's supply of two of the most important ingredients is monopolized by one firm of manufacturing chemists (J. C. Ayer & Co., Lowell, Mass.), it is more than probable that a compound so made would contain substitutes and therefore lack efficacy. Fortunately, the combination is effected in its most perfect form with just proportions of the pure ingredients only, compounded with conscientious and scientific skill, in the preparation known as Ayer's Compound Extract of Sarsaparilla. It is consequently within the easy reach of everyone to eliminate disease, even of the most virulent nature, from his system by the use of this absolutely perfect alterative. This, it may be well to call to remembrance, was the only medicine of its class allowed to be put upon exhibition in the World's Fair, this discrimination in its favor practically branding all others as valueless or injurious nostrums.



Attacks on Washing-Powders

don't affect **Pearline**. Pearline is a washing-compound, in powder form, to be sure, but quite a different thing. It's made so that it acts upon dirt as nothing else will, but can't possibly do any harm to substance, hands or fabric.

Soap-makers are advertising against washing-powders, claiming that they ruin the clothes. They're more than half right. But chemical analysis and the experience of millions of women prove that **Pearline** hasn't the power to harm clothes that soap has. And it saves all that ruinous rubbing that you have to use with soap, besides.

Beware Peddlers and some unscrupulous grocers will tell you, "this is as good as" or "the same as Pearline." IT'S FALSE—Pearline is never peddled, if your grocer sends you an imitation, be honest—*send it back*. 396 JAMES PYLE, New York.

JUMPING BEANS.

These beans are of a triangular shape, and are the product of a peculiar tree, found only in one part of the world. Each bean contains a wonderfully formed worm measuring about eleven millimeters in length by three in width, having sixteen feet. When laid on any flat surface, they will jump clear off the surface, turn complete somersaults and then continually hop, skip and jump.

The object of these movements has not yet been discovered. A plausible theory advanced is that the worm instinctively knows that if it remains near the tree, it will be destroyed by an enemy, hence its anxiety to get as far away as possible from its place of birth. The worm apparently lives without food and has no desire to escape from its shell, on the contrary it seems to be comfortable only when enclosed air-tight in its shell. If a small hole is bored in the shell, the worm instantly sets to work to repair the damage, and in a very short time will have the hole sealed with a fine silky web. After this is done the worm will again begin its tireless and almost incessant jumping and travelling.

The movement of the bean is wonderfully fascinating, it contradicts the laws of gravitation, for while sealed in its own house it can move both itself and house miles away.

If the worm is removed from its shell it will attempt to form another covering for itself.

The tree on which the beans grow produces a nut, each nut contains three of the beans, but only one bean in each nut contains a worm. The most surprising thing is that there is no hole or other indications of the way in which the worm entered the hard shell. It is believed that the egg producing the worm was early laid in the flower.

The bean should be kept uncovered, in a well lighted place, in a moderately warm place, and should be exposed to the sun thirty minutes daily, especially in winter. If this is done they will live from August until April or May. The Lum Smith Publishing House, 1222 Frankfort avenue, Philadelphia, has secured a lot of these beans and are now supplying the various trades with them for use for advertising purposes and for the amusement and instruction of children. An advertisement in another column of this journal will give full particulars as to prices.

GOOD COFFEE.

It is asserted by men of high professional standing that when the system needs a stimulant, nothing equals a cup of good coffee. It is also affirmed by eminent physicians that Ayer's Sarsaparilla braces up the system, quickens flagging energies, increases the appetite, promotes digestion, and for all the purposes of a blood purifier is the most reliable, the most powerful, as well as the cheapest medicine ever devised.

$100 REWARD, $100.

The readers of this paper will be pleased to learn that there is at least one dreaded disease that science has been able to cure in all its stages, and that is catarrh. Hall's Catarrh Cure is the only positive cure now known to the medical fraternity. Catarrh being a constitutional disease, requires a constitutional treatment. Hall's Catarrh Cure is taken internally, acting directly upon the blood and mucous surfaces of the system, thereby destroying the foundation of the disease, and giving the patient strength by building up the constitution and assisting nature in doing its work. The proprietors have so much faith in its curative powers, that they offer One Hundred Dollars for any case that it fails to cure. Send for list of Testimonials.

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A manuel of Hygiene, by Mary Taylor Bissell, Professor of Hygiene in the Women's Medical College of the New York Infirmary. 8vo., cloth, $2.00. The consideration of the subject is based on the modern scientific theory of the origin of disease and the methods of prevention deduced from this. It is intended to be practical and to accord with the best American usage. It is designed to supply the want of a concise textbook, both for medical students and for use in advanced schools and colleges.

Its treatment includes the subjects of Air, Water and Soil, with special reference to their contamination, and the diseases that may result from this. Drinking water—its relation to typhoid fever, cholera, etc., and the necessary public and private measures for guarding its purity, the hygienic significance of the dust of the air as a carrier of disease, the relation of the soil to illness, its drainage, etc., are specially considered under these heads.

Foods, their classification and function in nutrition, the diseases which may be carried by them are considered, and the purity of milk, with the state and household measures necessary to ensure this have prominence.

The Hygiene of the Dwelling, including the subjects of ventilation, heating and plumbing, is practically treated. School hygiene has a separate chapter devoted to it.

Personal Hygiene, and the subjects of growth and development are treated, with special reference to children. Exercise, as an important factor, is considered in a separate chapter.

Preventable Diseases, especially such as are communicable, are considered with reference to their specific cause, when known, and methods of disinfection, both public and household, are described in detail.

Specimen pages will be sent postpaid to teachers. Special terms for examination and introduction.

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◆

BARLEY CRYSTALS.

The Medical Profession have long and seriously felt the want of a palatable cereal food, which would act directly on the kidneys as an efficient diuretic, and at the same time prove a thorough emollient, as well as a renovating, nutritive and tonic agent in cases of irritable stomach or intestinal disorders.

In defining "emollient," Webster says "Barley is an emollient." Our Barley Crystals is the heart of barley, entirely free from bran or hulls, and meets all the above requirements thoroughly. Nothing in this way has before been offered to the public.

Both the "Barley Crystals," and the process of manufacture are fully protected by letters patent and trade marks.

Dr. S. C. Clark, a noted physician of Rochester, N. Y., who has devoted many years to the special study and treatment of kidney and liver diseases, writes us as follows:

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"I am satisfied that your claims are not strong enough; that it possesses very rare nutritive value, while it has a most satisfactory emollient and diuretic action. I have used the 'Barley Crystals' in my family, and we are all very much pleased with it."

Invaluable in Bright's Disease. Samples sent free if applied for. Address,

FARWELL & RHINES,
Watertown, N. Y.

◆

Intoxicated individual (embracing a lamp post)—What a (hic) wise thing it (hic) is to have (hic) lights on the lam' posts, so's a feller can (hic) find 'm (hic) at night!

To his mate the caterpillar said,
In a tone of caution, soft and low,
As they clung to the branch just overhead,
"Get on to the girl in the hammock below,"
[*Washington Star.*

"What made you tell your mother you had toothache? Now she'll give you medicine."

Johnnie—Qes, she'll pay me fur takin' it, an' then we can go an' get ice cream.

Every dog that has foam at the mouth is shot. If every man with foam at his mouth were shot there would have to be a revolution in the art of drawing beer.

Dinah Ebony—Aunty, de papers say mebby de black plague will come to this country.

Aunt Ebony—Don't you worry 'bout dat, honey. It won't show on us.

The American Association for the Advancement of Science has given New York an awful turn by announcing that there are more bacilli in Fifth Avenue dust than in Newtown Creek mud.

'Tis said by those whose habits do
The verdict fully emphasize,
The men who take their whiskey "straight"
Do take their walking otherwise.
[*Richmond Despatch.*

If you must draw the line at ~~Lard~~

and have, like thousands of other people, to avoid all food prepared with it, this is to remind you that there is a clean, delicate and healthful vegetable shortening, which can be used in its place. If you will

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COTTOLENE

instead of lard, you can eat pie, pastry and the other "good things" which other folks enjoy, without fear of dyspeptic consequences. Deliverance from lard has come.

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BEST QUALITY IS GOOD ECONOMY.
THE STANDARD OF EXCELLENCE FOR OVER FIFTY YEARS.

First Assistant Postmaster General, Frank H. Jones, sent the following matter to all postmasters, with orders to post the card containing it in their offices and call the attention of their patrons to it, that their mail could be returned.

"Don't mail your letter or valuable package without having your own address written or printed upon the left hand corner.

This will ensure its return to you if not delivered, and will prevent its being sent to and opened at the Dead Letter Office, Washington.

THE U. S. OFFICIAL POSTAL GUIDE warns us that over 5,000,000 pieces of mail matter go to the Dead Letter Office annually, containing many thousands of dollars; part can be returned to the senders and part cannot. If all letter writers would stick their *Printed Address* on their envelopes the Dead Letter Office at Washington could be abolished."

The above statement of the Post Office Department proves the great value of Gummed Addresses to every man, woman and youth who write letters. Think of it! Over 5,000,000 "dead letters" sent to the "Dead Letter Office" annually containing tens of thousands of dollars, etc., simply because the writers' addresses do not appear on the envelopes. This is a matter too important to be overlooked.

YOUR FULL ADDRESS Printed boldly on **1000** separate slips of postage stamp paper, 500 post-paid to you to stick on your **letters,** books, etc., and one each on **500 parcels of mail** from publishers, etc. to you, **no two alike,** together with our 16 page paper all for **10 cts.** Terms to agents, members of churches, schools, clubs, etc., 2 orders 18c.; 3, 25c.; 10, 60c.; 20 and over, 5c. each address. **O. I. C. U. R** going to order. We've nearly 200,000 customers already. Many from your town. **Your P. M.** can give you their names. **THE HERALD**, Test No. 48 B. Lum St., Phila., Pa.

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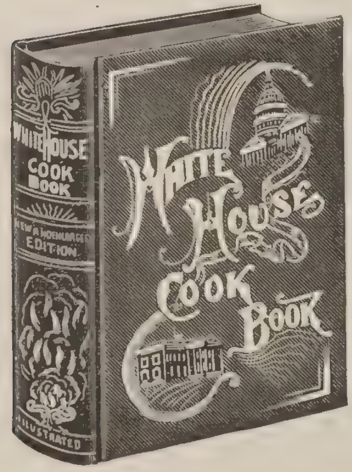

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—DOSE—

A heaping teaspoonful in half a glass of water, to be repeated once after an interval of thirty minutes, if necessary.

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OCTOBER 15, 1894.

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HOUSEHOLD.

TESTED RECEIPTS.

Every receipt here given is original, has been practically tested by the AMERICAN ANALYST and is therefore confidently recommended.

LAYER CAKE.

One cup sugar, yolks of two eggs, white of one, half cup water, two cups flour, teaspoonful baking powder, a pinch of salt. Bake in jelly tins.

FILLING (NUT).

One pint milk heated in a steamer. When hot add one tablespoonful corn starch dissolved in a little cold milk, two eggs, two thirds of a cup of sugar, one cup chopped hickory nuts. Cook until it thickens. Put between layers of the cake, after it has slightly cooled.

ANOTHER FILLING (COCOANUT).

One and a half cups of milk, half cup sugar, yolk of one egg, two tablespoonfuls cornstarch dissolved in a little cold milk. Heat the milk and make the same as custard. Add half a cup of cocoanut a few minutes before removing from the fire.

FIG FILLING.

One cup figs cut fine, half cup water. Cook until the mixture thickens. Then add half a cup sugar and cook a few minutes longer. Let it cool before putting between layers.

COFFEE CAKE.

Two cups brown sugar, one cup butter, one of molasses, one of strong coffee, four of flour, one teaspoonful soda. Dissolve in two tablespoonfuls vinegar, one tablespoonful of cloves, two of cinnamon, one of cream of tarter sifted in the flour. One pound of raisins, one pound currants, half pound citron. Bake in a slow oven.

SPICE CAKE.

Three eggs, using the white of one only, half cup butter, half cup sugar. Beat butter and sugar together to a cream. One cup molasses, one teacupful milk. Put one teaspoonful cream of tartar in the milk. Half a spoonful soda dissolved in a little hot water, two teaspoonfuls cloves, two of cinnamon and one of allspice. Bake in a moderate oven. Frost.

BROWN SAUCE.

Melt two ounces of butter in a small saucepan, add one ounce of flour, stirring until it is a brown color. Then add sufficient boiling stock to render it of a creamlike consistency, and season to taste, with salt and pepper.

BREAD SAUCE.

Take one pint of white starch, boil with an onion, a little mace, peppercorns and salt, strain and pour it over six ounces of bread crumbs. Boil for ten minutes and add three tablespoonfuls of cream.

OLD CURRANT SAUCE FOR VENISON.

Boil an ounce of dried currants in half a pint of water a few minutes; add a small cup of bread crumbs, six cloves, a glass of port wine and a bit of butter. Stir until the whole is smooth.

PIQUANT SAUCE.

Dissolve an ounce and a half of butter in a small saucepan over a moderate fire. Throw in a tablespoon of chopped onions, stir two minutes, sprinkle a teaspoonful flour over them, and beat with a spoon to prevent it from getting into lumps. Add half a pint of soup stock, a small bunch of parsley, a sprig of thyme, a bay leaf, a quarter of a teaspoonful of cayenne. Simmer gently twenty minutes, then take out the herbs, pour in half a wineglassful vinegar, and add salt if required. Let all boil together and serve.

OYSTER SAUCE.

Prepare some nice drawn butter, scald the oysters in a little water and mix with the butter; brain the oysters before putting them together. Mix well and let the sauce just come to a boil. Serve.

ASPIC JELLY FOR GARNISHING.

Take two pints of nicely flavored stock of a clear firm jelly; put this into a saucepan with a blade of mace, a tablespoonful vinegar and a glass of sherry. Let it boil; then stir in an ounce of the best gelatine, which has been washed in a little cold water. When again cold, add the whites of two eggs that have been whipped very light; let it boil. Then set back to settle, strain through a jelly bag until quite clear and pour it on a dish which has been standing in cold water. Cut it into dice for garnishing.

HORSE-RADISH SAUCE.

Two teaspoonfuls made mustard, two of white sugar, half a teaspoonful of salt, a gill of vinegar. Mix and pour over horse-radish. Excellent with beef.

HOUSE CLEANING.

To clean, or not to clean; that is the question:
Whether it is better the eye shall suffer,
The dust and moths go unheeded,
Or to bare the arms and begin the troubles
And by opposing, end them? To sweep; to dust;
And more: and by the broom to end
The eyesores and the thousand natural shocks
A housekeeper's flesh is heir to. 'Tis a consummation
Devoutly to be wished. To sweep; to dust.
To dust, perchance to scrub: ay, there's the rub.

Thus about twice each year housewives all over the land soliloquize, and the husbands if taken into their counsels invariably give the famous advice of *Punch* to those about to marry, "Don't."

It is strange that cleaning house, a most necessary undertaking, should be held in such horror by the male members of the family, and be looked upon as something little short of a calamity by woman-kind. And yet it is not so strange when one considers to what an extent some housekeepers carry it, and the auction-room appearance their homes present during this period.

It seems impossible for some to clean house without first tearing up all the carpets; piling the furniture in the hallways; taking down the beds and stove, and for two weeks, living on bakers' food eaten from the top of the flour barrel, and sleeping with nothing but a mattress between themselves and the hard boards.

Franklin once said that three moves were as bad as a fire, but to the average man one house-cleaning is worse than both.

This is about the time for one of these semi-annual cyclones to commence, and a little advice may not be out of place, for, if followed, it will make the thought of house-cleaning no longer a bug-bear, and will save the several weeks worry that always precedes it.

The fall is the proper time to clean house, and it is the only time when a general tear-up should be thought of.

Spring cleaning is a waste of time and strength, for you no sooner get your rooms nicely cleaned, than the time for open windows arrives; the dust blows in, and everything takes on the greyish tint so much disliked by all neat housekeepers. The flies, those pests it is impossible to keep out, help to add to the unclean appearance, and your windows which were so nicely polished, are soon streaked by the spring showers. All your neighbors go away; perhaps you follow their example and your house is closed a good part of the summer, of what use then is all that labor in the spring?

In the fall the dust and flies of summer are gone; the season of calls, receptions, and card parties is about to commence. Now, if ever, you wish your house to be clean.

With your mind made up to this effect, you should in the first place sit down and decide what is to be done—what carpets are to be taken up; what furniture repaired; what new things to be purchased, and every detail of the changes which you intend making.

Set aside three days in the week, say Tuesday, Thursday and Saturday, allowing the remainder of the week for rest or the accomplishment of other duties, and decide just what you will do on each day.

Do not lay out too much, but only what you think you can do without being worn out.

Your arrangements with carpet and furniture men can then be made, for you will know just what day you will be in the rooms where their services are required.

You should get their price and learn how long it will take to do the work. The carpets should be taken up in early morning of the day and be cleaned and down again before the next night, and if you make the matter urgent the cleaners will doubtless do this. The extra expense which the taking up and putting down will entail will be money well spent, and will save your husband an aching back, a bruised thumb, and will not endanger his church membership, to say nothing of having the work so much better and more quickly accomplished.

Begin to clean in the attics and work down, driving the dirt before you to the cellar.

Do a few rooms at a time.

When you get to the chambers, have the carpets taken up, and while they are being cleaned, do all your other cleaning, taking the beds to pieces, etc. By night you can have them together again, and no later than the next day your carpet should be down and your room as before, minus the dirt.

The same plan can be used for the lower floor, and everything will run so smoothly that your husband will hardly know you are house-cleaning.

If during this period, while in your working-costume, you should have callers, it is not necessary for you to make profuse apologies, the single word "house-cleaning" will be sufficient, and if they are sensible they will know how it is themselves.

Entertain them in your best manner, as though you were attired in your reception gown, and they will enjoy themselves much better than if you took up all the time lamenting your appearance. After your house is thoroughly cleaned, you should, each week, do a little cleaning, taking first one room and then another, thus keeping all in presentable apearance; but another general cleaning is not necessary for a year.—*Reflector*.

HOUSEHOLD AMMONIA.

This preparation is made after a patented process, and the manufacturers claim trade-mark protection on the use of the name. The method of preparation is described thus in the specifications: To 100 lbs. aqua ammonia, 18 degrees baume, is added 1 lb. oleic acid, and stir thoroughly. Let stand 12 hours to settle, then bottle. Hence this preparation is an oleate of ammonia dissolved in excess of ammonia, and the patent claims the right to use, instead of oleic acid, any other fatty acid that will make a soap soluble in and with the ammonia used. The owners of this article, in a letter to a contemporary a few years ago, said: "We have not the slightest objection to anybody bottling and selling any form or preparation of ammonia, pure or otherwise, provided it does not interfere with patent No. 210,208, and provided they do not sell it under such title as may cause their goods to be mistaken for ours."—*Pharmacist Era*.

MARGARIN COMPARED WITH NATURAL BUTTER.

AS REGARDS DIGESTIBILITY AND NUTRITIVE VALUE.

A. Jolles, in *Monatsh. Chem.*, relates that various statements have been made as to the relative values of margarin and genuine butter as foodstuffs, the general outcome of which is that while there is not much to choose between the two as regards digestibility and nutritive value, butter has a slight advantage over margarin in these respects. The author has carried out a long series of observations with a dog fed during four consecutive periods with butter and margarin alternately; the urine and faeces being collected and examined for fatty matter, nitrogenous constituents, etc., so as to obtain the data for determining how much fatty matter passed unassimilated through the animal under each set of conditions as to feeding. In the first and second periods more fat and less carbohydrates were given; in the third and fourth, less fatty matter and more carbohydrates, the fatty matters being butter in periods 1 and 3, and pure margarin in periods 2 and 4. The various articles of food (wheat meal, sugar, etc.) were carefully analyzed and made up into dog biscuits, so that the amounts of the different kinds of food constituents consumed during each period were accurately known. In this way it was possible to trace out during each period the proportion of proteids, fat, non-nitrogenous matters (starch, etc.), and mineral constituents (ash), which were either digested and assimilated or passed out undigested in the faeces. So far as fatty matters were concerned, 97 to 98 per cent was uniformly digested, whether butter or margarin. From figures obtained during the four periods the conclusion is drawn that under similar conditions of feeding, butter and margarin have practically identical coefficients of digestibility and nutritive value.—*Pharmacist Era*.

CONDENSED FOODS.

Many artificial baby foods are manufactured and sold in concentrated form. For example, products advertised as "substitutes for mother's milk" are made from cow's milk, to which is added a sufficient quantity of sugar to correspond with the constituents of mother's milk. The water is removed from the mixture in vacuo, leaving a fine white powder, which is put up in packages. Finely powdered wheat flour and nutritious vegetable elements are added in more elaborate preparations.

Another commercial article is condensed cider, which is made by evaporating the juice of apples. One gallon of it, costing 80 cents, will furnish fifteen or twenty gallons of cider that is sufficiently strong for bottling by the addition of fifteen pounds of sugar and the requisite quantity of water, says the St. Louis *Democrat*. Peach, grape, cherry, and apricot cider, similarly concentrated, are sold for $1.00 a gallon. Root beer is put up in the same manner, half of a pint of it making enough to fill sixteen half-pint bottles.

During the fiscal year 9,282 gallons of condensed lime juice were imported into the United States from Jamaica. For manufacturing this product the limes are put through a squeezing machine, and the juice is strained and filtered so that all the seeds and pulp shall be removed. Then it is boiled down to the utmost possible point of concentration in copper vessels, great care being taken that it shall not be in the slightest degree scorched or burned, which would spoil it by causing the acid to undergo a chemical change. Finally it is put up in bottles. Jamaica during 1891 shipped 44,492 gallons of this lime-juice to Great Britain. During the same period it exported to this country its entire commercial output of sour-orange juice, 1,102 gallons similarly concentrated. This statement is taken from a report of the United States consul at Jamaica, just received by the department of state at Washington,

Concentrated cocoanut is now sold in cans. It is a preparation made by chopping the kernels fine, drying them, and extracting the flavoring elements. These latter are made into a syrup with sugar. Vanilla flavoring for ice cream and other purposes is precipitated from the vanilla beans in the shape of a solid. Extracts of meat have grown enormously in popular favor during the last few years, and vast quantities of them are put up in Chicago. They contain little more than the flavoring portions of the subjects they represent, being merely stimulating and only nutritious in a very small degree, so that it is said a dog will starve on an unlimited supply of them.

The tendency nowadays seems to be to condense every kind of food, both animal and vegetable. Compressed salt is even provided for horses and other beasts, a brick of it being put in a frame above the water trough, where the four-footed creatures can lick it. It would be interesting to know what results would be obtained by rearing a human being from infancy to adult age on condensed forms of aliment exclusively. If the normal digestive powers could not assimilate all that was offered, they might, by giving artificial assistance in the shape of that substance obtained from the stomachs of pigs, which is called "pepsin" administered, as is usual, in compressed lozenges.—*Chicago Evening Journal*.

MEDICAL.

CHRISTIAN SCIENCE AND ITS RELATION TO THE MEDICAL PROFESSION.

(Read before the Medical Society of Pennsylvania, May, '94, by Hildegarde H. Longsdorf, A. M., M. D., Carlisle).

In appearing before you on this occasion I feel it due myself, as well as this learned assembly, to offer a partial explanation of my purpose in so doing. For otherwise it would certainly savor on my part of the arrogance of conceit, or an unwarrantable assumption of privilege, to attempt to address on a medical subject such an august company of veterans and superiors in an art where at most I can only be a tyro.

The papers read here are presupposed to come from those whose skill and knowledge have brought honor and repute to their names and value to their slightest utterance on such topics as habitually arise on occasions like this. Far be it from me to invade such a field, only to illustrate by my temerity the time-worn maxim that "fools rush in where angels fear to tread."

But while the primary object of our meeting is mutual discussion of the more immediately important medical subjects, and instruction from those who are so well able to give it, there are also closely allied and leading up to these, many subjects in the line of suggestion and inquiry which may pardonably be taken by the less gifted.

The subject therefore which I shall briefly consider here is one of these, not a purely medical subject from this standpoint, but rather one of those related subjects, which, though at first glance insignificant and even contemptible, yet from the proneness of the uninformed to exaggerate and mystify diseases and all remedial agencies—carry with them an overpowering influence, and to the younger practitioner especially, are baffling and vexatious.

Such is Christian Science, probably the most pretentious and certainly the most successful of the outgrowth of our modern high pressure civilization; which, not contented with its acknowledged empire over material nature, and subsidizing the results of scientific investigation, must needs enter the realm of psychological phenomena, and skilfully weaving therefrom a tissue of fact and fancy, spread it before the gaze of a too credulous public, call upon it to believe what it cannot explain and revere what it cannot comprehend.

There have been many such mock systems in former as in later years, most of them having for a basis the "divine art of healing," along with other pretentions to a spiritual or philosophical status, all wearing a more or less familiar guise to the reader of history. Christian Science however goes a step beyond any of its forerunners, is one shade finer and more plausible in its theory and more conspicuously successful than any similar intellectual epidemic the world has ever witnessed. It seems to unite and intensify into some semblance of symmetry, something of the astrology and prophetic hallucination of the Ancients; something of the religious ecstacy and mysticism of the middle ages; something of the progressive thought of the later school of the English scientists, and welding them together by the despotic power of that prescient imagination which, over-leaping the bounds of demonstrable truth, presents the result to the conservative thinker of to-day as a resonable doctrine, no less a universal panacea for "all the ills that flesh is heir to." These fatuous misbeliefs are the intellectual scandal of our age, and while we must desire to apply some corrective influence, it becomes a puzzling question how to regard those who honestly believe in them and what should be the attitude of the physician toward such as aspire under its provisions to the office of "healers."

In more accurately defining Christian Science I would observe that it must not be confounded with hypnotism, animal magnetism, faith or mind cure, spiritualism, clairvoyant or other trance, or the old-time powwowing-processes which the practitioner in country districts still frequently encounters. All of these it somewhat resembles, having apparently some family features of all, yet differing in essential particulars. Christian Science, pure and proper, disclaims or ignores these agencies and claims a heaven-derived power of its own; and in this probably lies its greatest influence—for in all times a "divine right" stoutly asserted and skillfully maintained has held its own against reason, logic and the evidence of the unprejudiced senses. There is no instinct so universal as that which responds to the intimations of the supernatural, and the most realistic among us must acknowledge this influence as a factor in certain diseases. We see it exemplified in the history of the earliest nations, and there we attribute it to ignorance, but the candid student must admit that the advanced intelligence of the later periods has changed the form, but not eradicated the inherent tendency.

To the primitive man death and disease appeared the immediate act of some invisible, but all-powerful being, who from malice or rage or other human passion dealt out dire punishment upon mortals. Hence his favor was sought and propitiatory rights and ceremonies were observed to avert disaster and suffering. But this is not to be wondered at. The ignorance of the ancients as to the true character and real origin of disease appropriately corresponded with their ignorance of the constancy of the phenomena of the external world. Subsequently, while the more cultivated and advanced nations were passing through the throes of a mighty religious revolution and the dismemberment of social structures was everywhere imminent, a further development of this natural attitude of man toward a Creator and the universe took place, and a thousand abnormal manifestations of mind over matter were attested, until a mystical system—partly real and partly fanciful was evolved. Under this system many delusions were experienced by such as might be called honest believers, while jugglers and magicians in all fields, but especially so in those allied to the curing of disease, were rife.

Following the renaissance of art and literature, knowledge grew, and it may be that with a more general diffusion of the underlying principles of medical science, such as the uneducated mind can grasp, and a clearer apprehension of the import of recent discoveries in bacteriology and similar fields of investigation, the demonstrations which are now so constantly made to lead the masses back to the twilight ages, in this respect will cease. But until this more general intelligence shall come to pass, we will doubtless continue to witness the phenomena of the blind gaining instant sight, the lame being made to walk, and the suppurating sore healed by a word, such alleged cures being regular occurrences in the vicinity of a properly qualified Christian Scientist. From these centers of abnormal experiences, ever-widening influences diverge, and we shortly see vast numbers of enlightened and cultivated persons of both sexes, and of every shade of religious belief, accepting and propagating the ideas that form the basis of the popular manifestation.

Christian Science shrewdly appreciates the value of this prevailing tendency of human nature, and therefore, as its name imports, it is found to be a compound of theology and the art of healing—in these two sides expressing the strongest wants of mankind. Otherwise it calls itself the "Science of Health," and an elaborate treatise has been given to the public for the purpose of explaining its peculiar doctrines or principles and setting forth the benefits which must accrue from its universal acceptance.

It was discovered, as its adherents put it, in the year 1866, by Rev. Mary Baker G. Eddy, of Lynn, Mass. In giving an account of her discovery and preliminary experience, Mrs. Eddy says that she was impelled from childhood "to seek diligently after God as the one great ever-present remedy for all human woe." She states the physical side of this research was aided by hints from Homœopathy, to the conclusion that mortal belief, instead of the drug, governs the action of the material medicine. She found in the remedies enumerated by Jahr that the pervading secret was that "the less material medicine we have the better the work is done," and she proceeds to prove that this is so by an illustration from this school of practice. "One drop of the thirtieth attenuation of Narrum muriaticum in a tumblerful of water, and one teaspoonful of water mixed with the faith of ages would cure patients not affected by a larger dose." The drug disappears in the higher attenuations of Homœopathy, and matter is thereby reduced to the proportion of mortal mind, but curative principle remains and is found to be even more active.

She also relates her own experience, while in failing health, with a distinguished mesmerist. His method of treating her was by manipulation and water, and although she acknowledges that he had some advanced views along his own line of research, she pronounces "mind cure on a material basis" a kingdom divided against itself.

In a similar manner she argues against the efficacy of animal magnetism. It is interesting to note the elimination of her own peculiar idea from the prevailing influence of the times, and her final success in reaching a standpoint differing from all her predecessors and thus gaining originality and potency for her cause. It must be confessed that there is something beautiful and attractive in the ideas thus expressed, and the most fastidious among us could take no exception (on the ground of ethical morality) to the tenor of her sentiments.

In her conclusions the odium of hypnotic experimentation is eschewed; the ridicule attaching to clairvoyant and other mediumistic practices is avoided. She demonstrates, in fact, the spiritual attenuation of a noble idea, more subtle and dilute than any homeopathy ever propounded; a metaphysical abstraction, more elusive and beguiling than any hypothetical figment portrayed in the pages of German philosophies; while there lingers about her doctrine a classic flavor not unworthy the noble parentage of Plato, who first taught the theory of ideas of essential forms.

Each one of these was at once the prototype and the cause of a number of transitory existences in the sphere of the sensible. To these ideas as to higher realities, phenomena were referred, and their explanation found in them by Platonism. Following along this line of suggestion, which every classic student has conned, we perceive that modern Christian Science is a restatement of an ancient principle, which has lived in and influenced metaphysical speculation in all ages.

Mrs. Eddy tabulates her theory on the understood dominance of supernatural dread or fear in most people, and at the same time skillfully evades direct issue with superstitious antagonisms, by calling fear another name for disease. She declares that "war is waged between the evidence of spirit and the evidence of the five physical senses." "Divine Science was against sin, sickness and death." And again, "All sensation is mind and mind is God," and further, "The notion of more than one mind is unsatisfying and unscientific." Her deduction, therefore, is that mind is synonymous with Good or God and per consequence at one with Life or the principle of existence. All else is material and not to be considered.

Thus she directs the following formula: "Science saith, to all manner of disease, know that God is all-powerful and ever-present, and the sick are healed." Other statements embodying this science, so-called, are made in the extraordinary book called "Science and Health," which is in a sense the Pharmacopœia of the new school, but it is on the basis of the foregoing that their practice is built up.

The patient is taught that sickness is a belief, a latent fear made manifest on the body in different forms of disease. "This fear is formed unconsciously in the silent thought, as when you waken from sleep and feel ill, experiencing the effect of a fear, whose existence you do not realize." But if you "fall asleep conscious of the Truth of Science, viz., that man's harmony is no more to be evaded than the rhythm of the Universe, you cannot awake in fear or suffering of any sort." Thus Christian Science aims at the highest medical ideal, the prevention, as well as the cure of disease. That matter cannot suffer was illustrated in a very simple manner by a very intelligent lady, a friend of mine, who while on a visit to the west, was led to investigate, and finally become a convert to Christian Science. She said, with much apparent conviction, "Why, if you would cut off your hand and throw it on the floor it couldn't feel." "It is only your mind, which is spirit, that feels, and spirit which is God cannot be diseased or suffer." So the whole belief in disease is unreal, a fantasy, the result of erroneous teaching, or latent fear, or sin.

This, then, is the whole doctrine. Comprised in these somewhat enigmatical and contradictory statements, is the motive power of a system which has more strength than most of us would be willing to believe. If it were not for this fact, that it is rapidly spreading, gaining friends and influence among the most intelligent classes, we might well dismiss the subject with a smile; as one more of the numerous phases in which the ever-restless mind, ever recurring to the unknown, ever tracing its circling course upon itself, seeking to find the cause from the phenomenon, has manifested itself.

But it has a vast and increasing power and not only among the uneducated. It has its representative literary journals, a system of propagating its tenets by pamphlets and tracts and books. It has an array of special agents or missionaries, a respectable showing of institutions or metaphysical colleges, extending over many of the different states, and a vast number of private establishments for the cure of every disease under the sun. Preaching and teaching come into the plan, and to a thoughtful observer it seems as if the dark ages, when Demonology and Magic ruled the court, the camp and academic grove, were about to return.

It is, as we have seen, an old acquaintance with a new face, and its extraordinary progress has doubtless been due to the reactionary tendency of the times among a large class of orthodox people, from the scientific materialism, naturalism, naturally growing out of the demonstrations going on here and abroad, as to the cause and prevention of disease.

The question arises how we are to regard it and how we are to be armed against its inroads. If mental force has a therapeutic value, if the mind can control not only the kingdom which of right belongs to it, but also the laws of matter and of physical sense, then it seems as if our resources were inadequate and some form of definite action should be taken whereby we could cope successfully and with dignity with what must otherwise be a dangerous foe.

It would be out of place to argue against the possibility of mental cures. Thousands of such instances are upon authentic record, and it would be idle to deny the power of the mind over the body. There is no question that certain diseases have been cured by believers in faith cure, in prayer cure, in every phase of this theory that can be imagined. There is such a healer near my home, who has hundreds of patients, from near and far they come, and I do not doubt that some are cured, and to a rational thinker there is no mystery about the process, but the fact remains that the process cannot be rationally explained, so that the subjects of it can clearly understand it. Consequently, in endeavoring to maintain our professional self-respect, we are in danger of actually becoming illiberal, narrow-minded and dogmatic.

The importance of some definite restraining force for these abuses can scarcely be overestimated, and if public opinion and the advanced philosophical science of our era have been powerless to effect this, it would seem to come into the province of legislative enactment.

FATAL ICE CREAMS.

It is probable (says the *Lancet*) that the serious and even fatal effects which from time to time have followed the consumption of cheap ices are capable of more than one explanation. Occasionally it would appear that the injurious result if due rather to the physical shock induced by chill, or this combined with repletion, than to an action poisonous in the ordinary sense. The case of a child who died suddenly on Clapham Common after indulging largely in ice creams may be thus explained. At all events, the rapidity of the fatal issue is suggestive of another cause than septic or mineral poison, and the more so that the case appears to have been an isolated one, though there can be little doubt that the ice vendor's barrow provided refreshments for many other mouths on the same day. Beyond an inspection of the methods and persons employed in the ice cream industry—a step which we have already advocated—it is not apparent how accidents like that referred to can be prevented by any mode of regulation. The case in question, however we may explain it, should certainly constitute an effectual warning to parents that they cannot safely trust, but must control, the fancies and appetites of their children. Particularly in the circumstances of childhood, with a nervous constitution, acutely sensitive to local stimuli and possibly the usual anæmic associations found in townbred children, it is advisable that some form of warm food should precede the iced morsel. This precaution, if observed, should prove valuable as a preventive of mischievous consequences; but the importance of moderation, or, in the delicate, even of abstinence from the popular dainty, ought to form a still more essential part in every parent's creed.

RAW EGGS.

There is no one thing quite so nutritious as raw eggs. For the convalescent, or those who are feeble and whose digestive apparatus is not in good order, raw eggs prove most wholesome and generally are very acceptable. They are readily and rapidly digested and when taken with a little sherry wine are quite palatable to the most people. A very popular drink at many soda fountains is egg phosphate, made with one egg, an ounce of syrup, two ounces of sherry wine, a dash of acid phosphate, fill the tumbler half full of shaved ice, shake well, fill up with soda water, sift on a little nutmeg and serve at once.

Dr. Ely, of Rochester, has been calling attention to the very great benefit that he has derived in the treatment of disease by the use of raw eggs. Some of his patients have taken as many as fifteen, twenty-five and even thirty-five raw eggs in twenty-four hours, and have kept this up for months. One of his patients took three thousand eggs in one year; another one five thousand four hundred and seventy-five eggs.

SIMPLE MAXIMS.

Doctor, here are a few simple maxims for you to impress upon your humble patrons:

1. Maintain an invariable recurrence of defecation.
2. *Ingest* not that which will *digest* not.
3. As related to the caput, preserve a thermic excess in the pedal terminus.
4. Shun straightforward aerial influxes.
5. Keep your textile vesture in consistent relationship with your meteorological environment.
6. Let your prandial repast generously exceed the others.
7. Seek your vespertine couch in the distal aspect of the gloaming, and accrue to erectitude consentaneously with the lark's initial martin chirp.
8. Avoid intense luminous reflexes while poring.
9. Contemplate not the vinous product when it is ruddy.
10. Be non-excessive in indulgence through the entire category of things that be.
11. Cachinnate and wax obese.
12. An intact intellect within a hale corpus is the *summum bonum*, with reference to all that most nearly affects you.—*N. C. Med. Herald.*

TREATMENT OF RED NOSE.

Helbing (*Therap. Monatshefte*, January, 1894) calls attention to the treatment of red nose—a condition of little importance, it is true, but decidedly annoying to the possessor. The condition he refers to is the bluish-red color of some noses upon remaining for some time in a warm room, coming in from the cold air, etc. The treatment he advises is the systematic application of the galvanic current. Both poles are applied to the nose and continually moved about.

The strength of the current he has regulated by the amount of burning complained of by the patient. Five to eight elements of an ordinary battery suffice. If the patient is very sensitive, the anode may be applied to the zygoma and the nose gently stroked with the cathode. This application is followed by an intense redness of the skin, which lasts for an interval of two to forty-eight hours. Too strong currents must be avoided on account of the excessive irritation they produce. The applications are repeated at intervals of two or three days. The method requires patience and a considerable number of applications (at least ten to fifteen), and the author has had to hold as many as thirty sittings. The author has used the method in thirty-one cases, and always with success, and gives reports of two of the more obstinate cases.—*Cincin. Lancet-Clinic.*

HOW TO SOBER UP.

If you have ever been out with a friend who has been drinking too much, and you, sober and unwilling to leave him until you get him home, are trying to persuade him to start for his house, then you will appreciate the situation in which I found myself not long ago. I could do nothing with my companion, and he was rapidly getting hopelessly intoxicated. The drunker he got the more obstinate he became. Finally I took him into an all-night restaurant, hoping that a cup of hot coffee would partially sober him. By the time the coffee came my friend was sound asleep, with his head on the table. I was in despair, when the waiter asked me if I wanted to get the man sober. "Why, certainly I do," said I. He took a bottle of sweet oil from a table and poured about a gill of it into one of the cups of coffee. "Make him drink that," said he, and walked off. I roused my friend and induced him to drink the whole cup of coffee without stopping. The effect was magical. I never saw any medicine act so quickly. In ten minutes he spoke clearly, braced up, got ashamed of himself, and started home. I had never heard before of that special use of sweet oil, and I always had to sober up in the old-fashioned way of going to bed in my boots, with my hat hung on the gas burner.

TWO EFFICIENT SIGHT SPOILERS.

Next to the universal dotted veil habit in working injury to the sight is the very popular use of colored lamp shades. In hall or drawing room the green, yellow, red or pink "umbrella" shades are charming; in the room where people read, write or sew, they are out of place. White alone should shade the lights in such a room. Two members of one family went to a specialist to consult him about their eyes, which were giving them much trouble, why neither they nor he seemed able to determine. Calling on them at their home one evening, he exclaimed almost immediately on entering the sitting room, "I know now what is the matter with your eyes—too much yellow!" Bright terra cotta and yellow ruled in the decorations, and of three lamps used two were of highly polished and highly reflecting brass, and the centre table lamp sent a very yellow flame through one of the golden "fish-scale" globes. White porcelain shades were ordered for the lamps immediately.

SANITARY VALUE OF HOT TEA.

Tea taken hot, is certainly more wholesome than iced tea. This is well shown by the enormous population of China, which could never have increased to its present numbers if epidemics had ravaged that empire as they have those of the West. In spite of overcrowding to a degree elsewhere unknown and indescribably filthy surroundings, the Chinese have remained healthy. The only sanitary redeeming feature of their lives is the almost universal use of tea as a beverage. That is to say, of water that has been boiled. This lesson in practical sanitation is of more value than anything brought forth by our numerous boards of health, national, state or municipal. In the presence of an epidemic of cholera, typhoid fever or dysentery, the wisest precaution to take against infection would be to boil all fluids used for drinking purposes.

HYGIENIC.

ARE MEN CLEANER THAN WOMEN?

The popular idea is that women are naturally neater and cleanlier in their persons and personal habits than men; but any old physician, in general practice, will tell you differently. The opinions of the doctors is substantiated by the records of the bath-houses, public and private, not only of America, but Europe. The following are the figures given by one of the principal public bath establishments of London's West End: In 1889, 10,104 women bathed, to 56,400 men; in '90, 11,843 women, to 67,168 men; in '94, 14,540 women, to 105,258 men. It may be said, of course, that women wash at home more than men, but, granting this to be a fact, the difference is too great to be made up by this, and it simply shows that a woman is content with a little dab of water and a wash-rag, while men demand plentiful ablutions. In one of the principal hotels of St. Louis the housekeeper once said to the writer that she found it impossible to make the women employed under her wash themselves, although large and commodious bath-rooms are provided for that special purpose. Girls would sometimes quit a situation rather than comply with the rules in regard to bathing. With the male help the case was exactly the opposite; some of them were always complaining that others occupied the bath too often or too long.

ADVICE TO THE SLEEPLESS.

Do you lie awake at night and anathematize the man who first suggested the connection between sleepiness and guilty consciences? Have you counted all the clocks in the house striking all the hours of the night, at different times? Have you tried to fix your mind on something impersonal and failed? And have you finally come to the conclusion that there were many arguments in favor of the chloral habit?

If you have done all these things, of course the indications are that you need a doctor. But it is not always convenient to summon a physician at 1 o'clock in the morning simply because you can't sleep. It is better to read, work and learn a few cures for insomnia, which you may try over night, and see a physician in the morning.

If you fear a sleepless night undress in the dark. Light stimulates and arouses the activities. Darkness is supposed to produce drowsiness. Put some chopped ice in a rubber bag and place it at the lower extremity of the spine. This is particulary quieting to the nerves. Do not use anything but a rubber bag or you will merely have a damp cloth and rheumatism by morning.

Do not use a pillow. Relax every muscle so far as it is possible. Sprawl over the bed with arms and legs stretched out. Take a sponge bath with tepid water just before going to bed.

Lie on your face instead of on your back. That is the way babies sleep, and their methods are scarcely to be improved upon in this particular. All pressure is removed from the spine by this means, and a delicious feeling of restfulness ensues.

Make up your mind that you want to keep awake long enough to hear some one come in or to outline the next day's work. You will drop asleep immediately.

ITINERANT INFECTORS.

In the last volume of the *Iowa Health Bulletin* attention was called to an unsuspected source of danger—the risk of spreading infectious diseases by means of itinerating pack peddlers. The attention of the Board was called to it by our President, Dr. Becker.

We have just received a letter from Dr. Becker in which he refers to another and striking illustration of the danger referred to.

He says: "I have just had a little experience which, in my humble opinion, should receive the careful attention of the Board of Health. It illustrates the fact that the pack-peddlers are becoming more and more disseminators of contagious and infectious diseases. Let me give a case in point. A family of one of my patrons was under quarantine on account of scarlet fever. A pack-peddler called and was refused admittance, but he insisted on showing his wares and staying all night. He was repeatedly refused, and told why, but he could not be persuaded to leave, until the husband made his appearance. He would have staid in this scarlet fever stricken family and gone out next morning to spread the disease broadcast. I think these peddlers should be declared a nuisance, and stopped from roaming over the State. Could we not do something to stop them?"

Peddlers who, knowing a house is under quarantine for an infectious disease, will insist on entering it, especially against the protests of the inmates, should be arrested and fined heavily, or have a good bull-dog turned loose upon them.

This is one of the mysterious ways in which infectious diseases spread in sparsely settled districts, and in farming communities. A peddler's pack has a wonderful attraction for children in many of the country homes. They gather around the peddler and eye with curiosity, and often with open mouth, every piece of merchandise exposed. They stand over it—perhaps handle it. The children here may all be in good health, but away off a mile or two, the peddler had exhibited his goods in a family where there was scarlet fever. The child or children may first have been in the desquamative (scaling-off) stage, and the infectious pieces of skin are transferred to the goods and come in contact with Mr. Jones' children. The peddler packs his goods and betakes himself to other homes. In a few days one, two, or three of Mr. Jones' children are stricken down with scarlet fever, perhaps in a malignant and fatal form. The doctor is called, and tries to ascertain the source of the disease. No clue can be given. He remarks: "I had a couple of cases over at Mr. Brown's a couple of weeks ago," and suggests it may have been carried from there. The family is sure it could not, as there was no communication at all The peddler's visit is forgotten, or if remembered, is deemed of no importance, as they had no trace of his itinerary before nor after visiting them. Perhaps months after, when the neighbors get together and compare their purchases, does the fact dawn that Brown's home had been visited by the peddler but a short time before he called and exhibited his wares at Jones'.

This is not an improbable picture. It is only too real, and the *Bulletin* hopes to be able to substitute for it something more beneficial to the people.

ADULTERATION.

COCOAS AND CHOCOLATES.

THE LAW AS TO ADULTERATION.

In an article dealing with the adulteration of cocoa and chocolate, the *Hospital* points out that the public should be made aware that prepared cocoas and chocolates are articles of commerce, the manufacture of which cannot be proceeded against for adulteration, provided the character of the article is mentioned on the label attached to each package. A recent case before the Court of Appeals, Jones v. Jones, is one in point. This appeal was first taken to Quarter Sessions against a decision of the justices sitting at Pontypridd, by which they convicted the appellant for having sold a certain article of food "not of the substance, nature, and quality of the article demanded by the purchaser." In other words, it was argued that the article sold was not cocoa, as demanded by the purchaser, but an admixture of starch, sugar and cocoa, to the prejudice of the consumer. A fine of 1s. and costs was inflicted; against the decision an appeal was made, first at

Quarter Sessions, where the court was divided in opinion, and subsequently to the High Court. The purchaser was an inspector under the Sale of Food and Drugs Act, and sent the cocoa to the county analyst, who certified that the sample contained 30 parts of cocoa and 70 parts of starch and sugar mixed therewith. The manufacturers of this cocoa had sold it for thirty years, under the same name "Pearl Cocoa," and the label contained these words: "Cocoa combined with other ingredients, the perfect purity and wholesomeness of which are guaranteed." The retail price of pure cocoa nibs was 1s. 5d. per pound of pure soluble cocoa, 2s. 8d. per pound, but "Pearl Cocoa" was sold at 8d. per pound. It was contended for the appellant that the label on the packet was a sufficient protection under the Act of Parliament, and had been accepted as such, but the defendant maintained that as the packet was delivered to him in white paper, with no notice of the label, it was a delivery which brought the appellant within the meaning of the section of the Act. The price showed that the admixture was not made fraudulently to increase the bulk, weight or measure of the article, or to conceal its inferior quality. Mr. Justice Mathew and Mr. Justice Cave, sitting as a Divisional Court, held that the conviction was wrong, and that the article sold was a well-known article, manufactured by the same people and in the same way for more than thirty years, and always sold of the same quality. The label complied with the sale of Food and Drugs Act, 1875, and in clear terms informed the purchaser that the article was "Pearl Cocoa," so giving sufficient notice; further, the suggestion that there was fraud was not sustained by the slightest evidence of intention to defraud on the part of anybody, and the ingredients of the admixture were admitted to bequite wholesome; the appeal was consequently allowed with costs. It follows that manufactured articles where the ingredients are admittedly wholesome and calculated to improve the prepared food and to make it more palatable and readily available for preparation for the table, are an advantage to the consumer, and can in no sense be regarded as adulterants. As well might. a baker who also sells cakes and biscuits be charged with adulteration. Indeed, we would go further, and state that so far from blame, any manufacturer is entitled to credit for inventing a recipe which shall make such an important article of diet as cocoa undoubtedly is more popular with increasing numbers of the population. Unfortunately,cocoa is adulterated, as Dr. Hassall has shown in his book on adulteration, where he states that he found 39 out of 68 samples contained earthy coloring matter, such as reddle, Venetian red and umber. It is to be hoped that no British manufacturer is responsible for adulterations of this kind.

CHOCOLATE POWDER SOLD AS LOOSE COCOA.

At the Wolverhampton police court, on August 24, before the stipendiary (Mr. N. C. A. Neville), Robert Allcott, 136 Anderson street, Monument-road, Birmingham, and trading at 61 Queen street, Wolverhampton, as the Colonial Tea Stores, was charged with selling cocoa not of the nature, substance and quality required, on Saturday, June 2. Mr. Allwood, inspector under the Food and Drugs Act, in opening the case, stated that in accordance with his instructions a girl named Emily Cash went to the defendant's shop and asked for a ½ lb. of loose cocoa, at 6d. per pound, as exhibited in the window. She was supplied by the manager, and it was wrapped in a paper which had printed on it the words,

"6D. PER LB.—A MOST DELICIOUS BREAKFAST COCOA."

There was also pasted on the paper a label a little larger than a postage stamp, which bore the words, "Contains cocoa combined with other ingredients, the perfect purity and wholesomeness of which are guaranteed in accordance with Act of Parliament." The girl did not know there was a label on the paper, neither was she told that the article was chocolate powder. He submitted a sample to the analyst for analysis, and the certificate stated that it contained 34 per cent of sugar, 36 per cent of sago, and 30 per cent of genuine cocoa. For some time before the date on which the purchase was made there was a bowl in the window of defendant's shop containing what appeared to be cocoa, and on it a ticket with the words,

"THIS IS OUR LOOSE COCOA.—6D. PER LB."

On going into the shop to make a further purchase of the same article, he was then informed it was not "cocoa," but "chocolate powder."

Mr. Allwood further pointed out that such an article as genuine cocoa was constantly sold in the trade, and he contended that, as regards the label, it did not fulfill the requirements of the Act, inasmuch as it was intended to conceal an inferior quality supplied; there was not a sufficient disclosure of the contents of the package. A purchaser ought to be informed of the nature of the goods sold, and he then has an option either of refusing or buying same. As emphasizing this point, he quoted from Cockburn, C. J., in Sandys v. Small, where the learned judge is reported as saying, that if a seller professes to sell a certain article, and sold it altered by the admixture of something else, he must be taken to have done so 'to the prejudice of the buyer," unless the fact was duly brought to the notice of the purchaser. Other cases were referred to by the inspector, who told the magistrate that, since his visit, the Colonial Tea Stores had changed the label in the bowl of their window and now called the article "chocolate powder."

Emily Cash was called, and gave the evidence of the purchase of the article. She did not know at what price pure cocoa could be purchased. Cross-examined by the solicitor for defence, Mr. Jacques (Messrs. Edwin Jacques & Son, Birmingham), the girl stated that the manager, Richard Allis, served her, and did not say the article was chocolate powder.

Richard Allis (manager), called for the defence, said he had been in the defendant's employ about twelve months. When engaged, he was instructed to inform customers that the article was chocolate powder, and he had always carried out that order. The public knew they could not buy pure cocoa at 6d. per lb. They sold pure cocoa, but the lowest price was 1s. 8d. per lb.

Cross-examined: Witness said he had no other label to put in the window than the one bearing the words, "This is our loose cocoa—6d. per lb." Pressed, he said he had never heard the public say at what price they thought pure cocoa could be bought, and when cocoa price lists were quoted to him, said pure cocoa could be sold at less than 1s. 8d. per lb., but they had none.

Mr. Jacques argued that no offence had been committed, and cited cases supporting his contention. The stipendiary said he had no doubt the girl was not told the purchase was chocolate powder. She was not supplied with the article asked for. It was deception to put in a shop window what was labeled "loose cocoa," and to tell customers after purchasing that it was chocolate powder. A fine of £2 and costs (total, £3 8s.) was imposed.

Mr. Jacques: I suppose we have permission to appeal? The magistrate assented, the fine, etc., being paid without prejudice to such right of appeal.—*Food and Sanitation.*

ARTIFICIAL OLIVE OIL.

In Russia it is the custom to keep a lamp constantly burning before the Icons, or holy images, of which every family deems it necessary to have at least one in the house, and usually one in every living room. According to tradition, only olive oil should be burned in these lamps, and consequently this substance is an article of very considerable commerce throughout Russia. On account of its price, for several years past a persistent effort has been made to supplant the genuine article with rapeseed oil mixed with mineral oil, but the Holy Synod "got on" to the substitute and forbade its use. This would probably not have made so much difference were it not for the fact that the mixture produced, in burning, an intolerable stench. It is now reported that dealers in oil for this purpose have succeeded in producing a mixture that has all of the qualities of pure olive oil, and of which, as the Holy Synod can't tell the difference between it and the genuine, it has consented to permit its use. According to Prometheus, this mixture consists of 550 parts rapeseed oil, 150 parts of cocoanut oil, 50 parts of olive oil, and 250 parts of kerosene. In order to make the resemblance to olive oil complete, the mixture is colored green by the addition of a small quantity of chlorophyll. As thus prepared the Icons, even, cannot tell the difference, and if they are satisfied, who shall complain?—*National Druggist.*

PURE ITALIAN WINES.

In the public interest it would be very desirable if some analyses were made of alleged "Pure Italian Wines." Chianti, for instance, should be one of the cheapest, and certainly should be one of the most popular wines on the English market if it were possible to obtain it of the same quality as in Italy; but the character of the Chianti Barolos Lacrima Christis offered as Italian wines to the English consumer is so fearful and wonderful that many we have recently seen would pass excellently well for execrable vinegar. Really first-class Italian wines have much to recommend them, and it is a great pity that so much trash of the character we mention should be on the market, and be largely advertised, as it leads consumers to form an absolutely unwarranted opinion as the real character of Italian wines.—*Food and Sanitation.*

The "vermiform appendix," wherever that is, is evidently not so convenient a place for young ladies to stick their chewing-gum on as the underneath side of a table. At least such was the opinion of the coroner's jury in the case of Miss Mary Brown, of Princess-Anne, Md., who swallowed a piece of gum, which, lodging in that delicate spot, caused her death.—*St. Louis Confectioner and Baker.*

We are getting some new designs in party platforms this season. Striking contrasts and bizarre effects are very popular. Principles are cut bias and tacked on as trimmings anywhere to give an appearance of fulness when worn at the polls. Neutral tints are affected by a few, but the prevailing fancy is for combinations of many colors.—*Louisville Courier-Journal.*

INVENTIONS, SCIENCE, ETC.

THE MAKING OF DIAMONDS.

(By Vaughan Cornish, M. Sc., etc., in *Knowledge.*)

The reproduction of the diamond by M. Moissan has put the coping-stone to the work of mineralogical synthesis. For some years past it has been thought that the solution of this problem was merely a matter of time and patience; but it is no little satisfaction to be able to say at last that the thing has been done, for it is indeed a striking illustration of the power over stubborn matter, which is won by the patient student of science. In the light of what has now been accomplished, it may not be without interest to refer to what was written in this journal on the subject of the production of diamonds previously to the work of M. Moissan. In *Knowledge* for May, 1891, at the conclusion of an article on "The Artificial Production of Rubies," the matter was referred to as follows:

"The great problem in the artificial production of gems is the prearation of the diamond. . . . In the case of other minerals the successful production has generally only been achieved after a minute study of the mode of natural occurrence, and this has afforded guidance as to the best means of imitating the natural process of formation. It is only of recent years that the diamond has been found in its original matrix, so that materials have been wanting upon which to base experimental methods. The chemical nature of the body, a combustible substance, is so different from that of the ruby and most other gems, which are oxides or oxidized materials, that the methods to be employed for its production will probably involve the application of different principles. There is no reason, however, to regard the problem as insoluble. When sufficient guiding data have been obtained, skill will not be wanting to imitate, in the laboratory, the conditions under which nature has worked in the formation of this most beautiful product of the mineral world."

What some of these determining conditions might be was indicated in a subsequent paper on "The Diamond Mines of South Africa," which appeared in *Knowledge* for October, 1891. "To the mineralogist the chief interest of the South Africa mines lies in the fact that the 'blue rock,' or kimberlite, appears to be the original matrix of the diamond . . . It is worthy of note that a black shale forms one of the surrounding rocks, and pieces of this shale have been found baked and otherwise altered in the blue rock. The suggestion has been thrown out that the diamonds were formed by the alteration of the carbonaceous matter of the shale *under the influence of a moderately high temperature and great pressure.* Such indications are useful as affording suggestions to the experimentalists, to whom, in spite of previous failures, we must look to tell us definitely how the diamond is formed."

If the diamond be highly heated in the presence of oxygen, it takes fire, as is well known, and burns with the formation of carbonic acid. If it be heated not in contact with oxygen, it swells up and blackens, reverting to the ordinary charred form of carbon. But the action of heat upon bodies is in many cases very different when they are subjected to high pressure, a principle established by Sir James Hall, more than one hundred years ago, in his celebrated research on the conversion of chalk into marble, one of the achievements of experimental geology, described in *Knowledge* for July, 1891.

As will be seen, M. Moissan invoked the aid of pressure to modify the action of heat in his experiments, and produced diamonds from charcoal, a substance of the same nature as the "shale" which occurs in the Kimberly rock. The formation of crystals is, as a rule, best brought about either by sublimation or cooling a solution. Carbon, however, cannot be distilled or sublimed, and is insoluble in all ordinary solvents, such as water, or aqueous solutions of acids and alkalies, or in liquids such as alcohol, ether or benzene. On the other hand, molten metals can take up or dissolve carbon to a not inconsiderable extent, as happens, for instance, in the well-known process of iron smelting. The molten iron in the blast furnace dissolves some of the carbonaceous fuel, a part of which, when the iron is allowed to cool and solidify, crystallizes out in plates of graphite.

This is an example of the production of a crystalline form of carbon from a non-crystalline variety, and it is at the same time an instance of the artificial formation of a mineral.

M. Moissan, in his experiments, employed iron as a solvent for carbon, which was in the form of charcoal; but he modified the action of heat and the solvent by subjecting the carbon-saturated iron to a considerable pressure. It may be noted here that M. Moissan finds the principal constituent in the ash of the native diamond to be oxide of iron. It is known, also, that native diamonds often contain liquefied gases in cavities of the crystal, and that they are sometimes liable to spontaneous disruption, owing to a state of strain which is probably due to their having been formed under high pressure.

In an earlier series of experiments, iron melted by means of an electric furnace, and raised to a white heat, was allowed to saturate itself with carbon in the form of strongly compressed sugar charcoal. The crucible in which the operation was conducted was then plunged into cold water, which cools the outer portion of metal so as to form an outer layer of solid iron. While this outer coating is still red hot the crucible is withdrawn from the water, and the cooling proceeds more slowly. To realize what goes on within the jacket of solid iron, we must remember that the still liquid interior is molten iron, containing a large excess of dissolved carbon, and that iron *expands* in the process of solidifying. Hence, during the process of solidification within the jacket or crust of chilled metal, great pressure is exerted. The process of solidification, therefore, goes on slowly and under great pressure, and an examination of the resulting product showed that, under these changed conditions, a part only of the surplus carbon had crystallized out as a graphite, and that in the residue left after dissolving away all the iron by means of boiling hydrochloric acid, and other solvents, there was a certain quantity of a denser form of carbon (having a specific gravity of 3 to 3.5), and hard enough to scratch a ruby; and that among these heavier portions of the residue were transparent particles, having a greasy or waxy lustre, and marked with parallel striæ and triangular depressions. These transparent particles burnt when heated to 1050° C. in oxygen gas, and, as it appeared, with the formation of carbonic acid; but the particles were too small to allow of a quantitative experiment. Similar results were obtained by the slightly modified method of rapidly cooling an ingot of molten iron saturated with carbon from a temperature of 2,000° C. In a few cases small fragments were obtained "*qu'ils ressemblent aux petites fragments de diamant transparents que nous avons rencontres dans la 'terre bleu' du Cap*" (*Comptes rendus*, February 6, 1894). The result may be summed up by saying that, up to the date of the experiments described in the above-quoted paper, Moissan appears to have succeeded in *reproducing that transparent variety of carbon of which native diamonds are composed.* The specimens could hardly be called *diamonds*, although they showed certain characters of the native diamond—*e. g.*, a waxy lustre, and parallel striæ and triangular depressions on the surface.

Since the experiments above described, a happy modification of the method employed has given results of a far superior kind, perfect diamonds being formed, having the distinctive physical peculiarities of the native stone, and of sufficient size for M. Moissan to prove by quantitative chemical experiments upon some of the specimens that they burnt with the formation of pure carbonic acid. In the course of experiments made in former years by other experimenters, using other methods, transparent crystalline bodies were obtained which were thought to be diamonds, until the failure to satisfy the carbonic acid test showed that the crystalline particles were not composed of carbon.

Moissan's modified method is as follows: Iron is saturated with carbon at the white heat of an electric furnace, and under pressure. The crucible containing the molten iron is then quickly lowered to the bottom of a bath of melted lead. This ensures quicker cooling than when the iron is plunged in water, owing to the fact, first, that the white hot iron does not really come into contact with the water, and, secondly, that the lead is a good conductor and carries away the heat rapidly. It seems that the two liquid metals behave towards one another much as oil and water, and the molten iron collects in spherical globules which rise to the surface of the molten lead, the difference in the specific gravity of molten iron and of molten lead being of course very considerable. The surface of the drops of liquid iron which float upon the surface of the lead quickly solidifies, the smaller drops with a diameter of one to two centimetres first, the larger drops after a lapse of a longer time, and the solid little balls of iron are left to float on the molten lead where they cool down. The interior of the balls is of course liquid long after the formation of the solid crust. The tendency of the central parts to solidify is resisted by the solid crust, owing to the fact before mentioned that iron expands in the act of solidification. Meanwhile a part of the carbon crystallizes out from its solution in the liquid iron. After a time, as the cooling goes on, the lead also solidifies, and the little iron balls are left imbedded in the ingot of lead. Then begins the process of getting at the small quantity of the carbonaceous material which it is desired to examine. The lead which adheres to the iron is dissolved away with nitric acid, the iron is dissolved by hydrochloric acid, and further treatment with suitable solvents leaves the sought-for residue, a small quantity of material left after the tedious process of removing by slow chemical means the relatively large mass of metal.

Transparent diamonds are found in the residue having well-defined crystalline faces, striated and marked in the well-known way, and the edges generally curved; they have the high refracting power, the specific gravity, and the hardness of the native stone. The peculiar form known as the *hemihedral* predominates among these crystals as in those of native diamonds, and their formation under pressure is found to give rise to the phenomena of anomalous polarization of the light which passes through them, as well as occasionally to spontaneous disruption; characters which, as has been mentioned, are sometimes noticed in the native stone. The diamonds are, of course, small; one with a diameter of half a millimetre appears to be reckoned a fine specimen. Further practice in working the process will probably enable larger specimens to be obtained, as has been the case with the production of rubies, which are now produced of a size sufficient to be used in the jewelling of watches.

However this may be, the production of diamonds is now an accomplished fact, achieved by the patient skill of the same worker, who, seven years ago, successfully overcame the great experimental difficulties which rendered fruitless the many former attempts to isolate the chemical element, fluorine.

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SHARK OIL.

Shark oil is exported in large quantities from Iceland to Germany. It is of a fine color, never becomes thick, and is said to possess similar medicinal virtues to cod-liver oil; and no doubt it is often sold in the name of the latter product. A fleet of 100 boats is engaged in the industry every year, from January to August. They are schooners of from thirty to fifty tons, with a crew of from eight to ten men. The sharks are captured about twenty miles from the coast in the winter, and in the summer about 100 miles away, in deeper water. Every two or three weeks the boats return to port, with from 100 to 120 barrels of liver, which is boiled in dirty and evil-smelling hovels. The sharks captured by the Icelanders reach 20 feet in length and 5 feet in thickness. A liver yields up to five gallons of oil. The neighborhood of a shark-oil refinery is not to be mistaken, as the oder arising therefrom is far from pleasant. The fishermen earn about 35*s.* per month, with a premium of 6*d.* on each barrel of liver. The captain gets 2*s.* 3*d.* per barrel for the first 100, and 3*s.* 4*d.* per barrel for all in excess. Sickness seems to be very rife among sharks, judging from the small quantity of healthy livers, belonging to healthy fish, compared with the greenish ones from the fish suffering from disease, and the red livers from the thin, ill-conditioned fish. The Icelanders only take the livers from the fish, and neglect the fins, skin, and teeth; but that is not so in the Tasmanian fisheries, as in Sydney fins fetch £28 per ton They are also saved in the Hawaiian, the Arabian Gulf, and the China fisheries; in fact, in China the fins of sharks are considered a delicacy. The Iceland shark is not such a difficult fish to tackle as the tigar shark, the terrible "bluepointer" of Australian waters, which, although smaller, is swifter, more ferocious, and furnished with a more massive jaw than his congeners; however, a large number of fishermen fall victims to his voracity and violence. One of the cheaf sites of the shark-liver industry is Slamsund, but when the oil leaves there it is not fit for use, but is sent on to Christiania, where it is refined and freed from sanguineous globules and stearin, filtered through paper, and packed ready for the market.

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TO RENDER WOOD UNINFLAMMABLE.

R. Stübling, in *Bayer. Ind. und Gew. Bl.*, recommends a solution of caustic potash, 1 part, in 16 parts of water, or of 1 part of caustic soda in 24 parts of water. This may be painted over the woodwork; or, in the case of small articles, like pieces of furniture, the wood may be soaked in the solution and afterwards dried. Even thin slats, thus treated, becoming highly resisting to fire, while their elasticity and flexibility is also largely increased.

A CHEMICAL DETECTIVE.

A Budapest manufacturer has informed the police that he possesses a powder with which thieves can be caught. Having recently made the unpleasant discovery that his cash-box was plundered day after day, and failing in all attempts to catch the thief, he applied in his dilemma to Mr Telek, professor of chemistry at the Franzstadt Commercial Schools, and the latter gave him a powder which he sprinkled over his cash every night before leaving the office. This powder has the peculiar effect of dyeing the skin blue, the color being intensified by washing, while it resists the application of soap. On the very first day the manufacturer noticed a deficiency of eight crowns in the silver cash-box. He at once called his employés together and ordered them one by one to steep their hands in a basin full of water, got ready for the purpose. One of the men was very loath to follow the example of his comrades. At last he consented, when no sooner had he dipped his hands in the bowl, than they turned a dark blue! His employer stepped up to him and said: "You are the thief!" and the man confessed.—*New England Druggist.*

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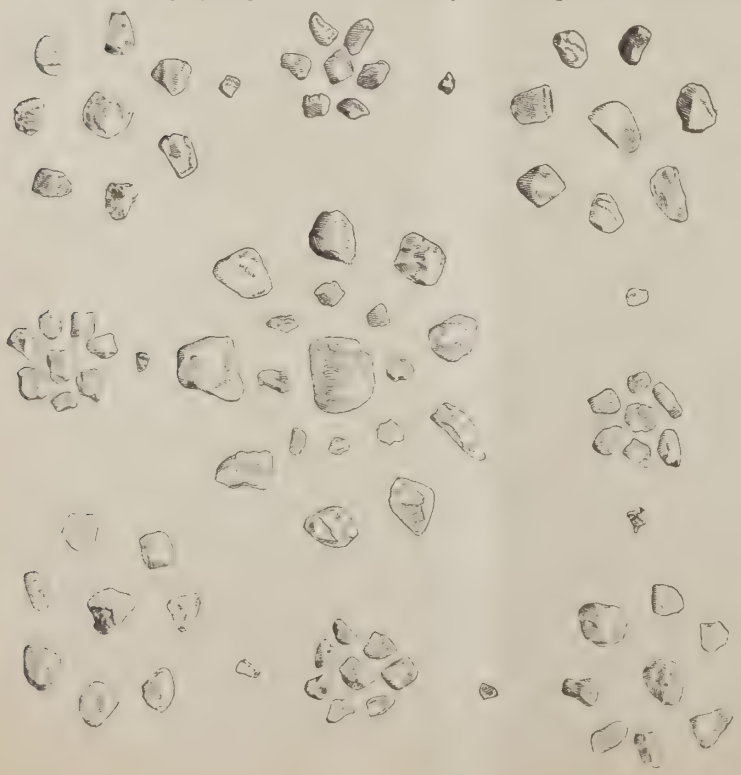
The nature of graphite, sometimes called plumbago, or black lead, is not generally understood; and therefore its great value in the mechanical arts has not been fully appreciated. Graphite is one of the forms of carbon. It is not affected by heat, cold, acids, alkalies, or any known chemical solvent. It is also the best solid lubricant known to science, a remarkable conductor of heat and electricity. The peculiar qualities of graphite have given it a wide range of usefulness. It is used in the manufacture of lubricants for all purposes, crucibles, stove-polish, lead-pencils, foundry facings, electrotyping-graphite, graphite paint, etc.

CALCULI DISSOLVED BY THE

BUFFALO LITHIA WATER

The following plate is from a photograph and represents the exact size and shape of Calculi passed by the Hon. T. J. Jarrett, ex-Mayor of Petersburg, Va., under the action of Buffalo Lithia Water.



Statement of Dr. John Herbert Claiborne, M. A., M. D., of Petersburg, Va., ex-Presiden and Honorary Fellow Medical Society of Virginia.

PETERSBURG, VA., Sept. 5, 1892.

E. C. LAIRD, Buffalo Lithia Sprnigs, Va.

My Dear Doctor:—I send by this mail a box of CALCULI, passed at various times within the last year by Hon. T. J. Jarrett, our former mayor, whilst drinking the BUFFALO LITHIA WATER. They give him but little pain now when passing. I have never critically examined the broken CALCULI, passed in such quantities from Mr. Jarrett's bladder, but am under the impression that the most of them were MANESIAN PHOSPHATES. There were specimens, however, which presented the appearance of OXYLATES, and, I remember, impressed me specially as being URIC ACID. I do not pretend to account for the mode of their solution by the Buffalo Lithia Water. There is nothing in its analysis which would warrant such results, but THE RESULTS ARE THERE, and seeing is believing. I can only suppose that in Nature's alembic there has been some subtle solvent evolved, too subtle to be caught by our coarse agents, which makes this wonderful disintegration. "There are many things in heaven and earth not dreamt of in our philosophy," and his is a short creed who believes only what he can prove or explain. Faithfully yours, JOHN HERBERT CLAIBORNE.

It is well known that stone in the bladder, for the most part Gout, Rheumatic Gout, Rheumatism, and also various forms of Dyspepsia and Nervous prostration have a common origin, viz.: excess of uric acid in the blood. It is evident, then, from the foregoing statement, that this water must possess extraordinary potency alike in all of these maladies. In Bright's Disease of the kidneys it is well-nigh specific.

Water in cases of one dozen half-gallon bottles, $5.00, f. o. b. here, and for sale by all first-class druggists.

Illustrated 32-page pamphlet, giving further information, sent prepaid on application to

THOMAS F. GOODE, Proprietor,

BUFFALO LITHIA SPRINGS, VA.

MISCELLANEOUS.

CORN IN BEER-MAKING.

For a number of years more or less corn has been used by American brewers in place of barley. Recently the consumption in this way has shown an increase in Germany, and efforts are now being made to further extend its use. The agent of the department of agriculture who is teaching Germans different methods in which they can profitably use this important cereal, reports further success in experiments looking toward the general introduction of maize as a component of beer. The prejudice of a good many consumers of the beverage in this country against the substitution of corn for barley malt is perhaps even more pronounced in Germany, and it has been necessary to get a special permit from the government for the use of it. The endeavor to educate the common people in the kaiser's domain to the point of largely utilizing corn as a staple article of food is meeting with indifferent success. This is perhaps partly owing to the present high prices, but largely to the old prejudice in favor of rye bread.—*American Agriculturist.*

ON OLEOMARGARINE.

Oleomargarine is an imitation product, sold honestly in many cases. The truth against it is strong enough. There is no need of bolstering up an impregnable position by exaggeration and over-statements. A paragraph is going the rounds of the newspapers giving a list of acids and poisons named in the patents of oleomargarine. If these substances were to be found in oleomargarine it would be quickly crushed out of existence on health grounds. It is a fact that many acids and other unpleasant substances are not infrequently used in chemical processes in the production of food products when the ultimate result is entirely free from any of the deleterious substances used at different stages of its manufacture. Because nitric acid, sugar of lead, sulphate of lime, benzoic acid, sulphuric acid, chlorate of potash, bicarbonate of potash, salicylic acid, carbolic acid and many other substances are named in some oleomargarine patents, it does not follow that these are to be found in the finished product; and the circulation of such statement may do the cause of honest butter injury, because they are not literally true. We believe that nothing is stronger than the bald, bold statement of actual fact.

No indictment against oleomargarine is stronger than the statement that it is an imitation product, that imitation in and of itself implies deceit and misrepresentation, and that oleomargarine is usually sold fraudulently when there is no restrictive legislation or when the appearance of the purchaser makes it probable that the fraud will not be detected.—*Our Grange Homes.*

Then the only indictment against oleomargarine is that it is an imitation. Does imitation always indicate deceit and misrepresentation? A little coloring matter is put into butter by the farmer to improve its appearance and imitate the golden yellow of the best grades of butter. It doesn't harm the butter—but it is an imitation. Is it therefore to be denominated a deceit and fraud on the consumer? In all lines of trade there are imitations—legitimate and fair. The imitations of the Greek Slave—copies if you will—are none the less commendable, because they are imitations.

But the war against oleomargarine is not because it is an imitation, but because it is a substitute. The anti-oleo men are not willing that it should be sold on its merits as a substitute—they would brand it with the mark of Cain and pink-tint it. Why? Why isn't it as legitimate a product as cottolene? If it is a cheap and nutritious food product why object to its sale for what it is? No honest man favors selling oleomargarine as butter, but many believe it should be sold as oleomargarine. We look only at the equities of the thing. We have no special liking for oleomargarine—never use it; but we do believe that the crusade against it is senseless, unfair, inimical to the best interests of the great consuming public.

Make the law as stringent as you will against its sale for anything except just what it is—but in justice allow it to take its place in the commercial world unhampered by weighty and practically prohibitive laws.

STUBBORN FACTS.

Facts are stubborn things, as many a guilty wretch could testify who has tried to escape the meshes of accumulating evidence. So are they stubborn when they point conclusively to the superiority of a medical preparation. This is the office they perform for Scott's Emulsion, in so striking a manner that all ought to be convinced. Case after case might be cited of the early stages of consumption, bronchitis (both acute and chronic), and, in fact, all diseases of the respiratory organs, where Scott's Emulsion has effected a cure. Besides, in many cases, it has lessened the severity of the disease known as "la grippe." If you are subject to sudden colds have this valuable medicine on hand, for it is unwise to leave the cold develop into something worse when the remedy may be so easily obtained. All families should keep it on hand.

NEUROSINE

THE MOST POWERFUL NEUROTIC ATTAINABLE.

ANODYNE AND HYPNOTIC.

A reliable and trustworthy remedy for the relief of Hysteria, Epilepsy, Neurasthenia, Mania, Chorea, Uterine Congestion, Migraine, Neuralgia, All Convulsive and Reflex Neuroses. The remedy par excellence in Delirium and Restlessness of Fevers.

FORMULA: Each fluid-drachm represents 5 grains each, C. P. Bromides of Potassium, Sodium and Ammonium, 1-8 grain Bromide Zinc, 1-64 grain each of Extract Belladonna and Cannabis Indica, 4 grains Ext. Lupuli and 5 minims fluid Ext. Cascara Sagrada, with Aromatic Elixirs.

RICHMOND, VA., Sept. 29, 1891.

I prescribe NEUROSINE in the class of cases for which it is indicated, daily, and with satisfactory results. It completely relieves restlessness in Fevers.

Landon B. Edwards

Ed. Virginia Medical Monthly.

MEMHPHIS, TENN., Feb. 6, 1892.

I obtained happy results from the use of NEUROSINE. It is certainly the best neuralgic medicine I have used. I have tried it in some cases of Trifacial Neuralgia, after having tried some of our most powerful remedies. None acted as well as NEUROSINE.

Editor Memphis Medical Monthly.

MEMPHIS, TENN., Jan. 7, 1891

I have obtained entire satisfaction from the use of NEUROSINE in cases of Neuralgia.

Dean Memphis Hospital Medical College.

CHATTANOOGA, TENN., Sept. 6, 1891.

Having used NEUROSINE in a number of cases I must say the preparation has given better results and more universal satisfaction than any other combination ever used by me. Have tried it in many nervous affections, in some it is a specific, in others a therapeutic agent of very great value.

W L Gahagan

Coroner of Hamilton County.

MCKENZIE, TENN., Feb. 12, 1891.

NEUROSINE had such a happy effect in a case of Neuralgia or Congestive Headache, in which I tried it, often having failed on other things of similar nature. The case was one of long standing Sick Headache of peculiar character. The lady, three days after confinement, without any fever, took severe headache. NEUROSINE relieved her immediately.

R D Erwin

FOURCHE ARCUAULT, MO., March 29, 1892.

I sent about two tablespoonfuls of NEUROSENE to an old lady, aged 84 years; she had been complaining for some weeks with Headache and Neuralgic pains all over her body more or less. She took that small amount and has been quite free from pain ever since, went to church in a farm wagon, 1½ miles, rough road, and is still free from pain and sleeps and eats better. I am well pleased with it.

U. H. JOHNSON, M. D.

DOSE: From one teaspoonful to a tablespoonful, in water, three or more times daily, as may be directed by the physician.

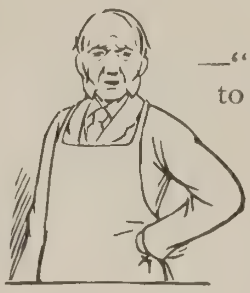
Supplied in Eight-Ounce Bottles.

To any Physician, unacquainted with the medicinal effect of Dioviburnia and Neurosine, we will mail pamphlets containing full information, suggestions, commendations of some of the most prominent professors in medicine and various methods of treatment. Or to those desiring to try Dioviburnia and Neurosine, and will pay express charges, we will send on application a trial bottle of each.

DIOS CHEMICAL COMPANY, ST. LOUIS, MO.

TEMPTATIONS OF THE PALATE.

There is no season in which ordinarily intelligent persons are so apt to do imprudent things at the instigation of appetite, as in the spring. They are weary of the heavy, heating and at best somewhat monotonous diet of winter, and welcome with avidity the fresh flavors and succulence of the tempting products of the hot-house and the southern garden. Indulgence in such temptations should be tempered with discretion, were it only out of consideration for the fact that the body has a rather obstinate will of its own, is prone to form habits and cling tenaciously even to those which are bad for it, and will not usually, without emphatic protest, accept of sudden and radical changes in diet. But in this particular case, it is very likely to be quite right in objecting to much of the palate-pleasing stuff forced upon it. Fruits and vegetable matter generally are proper and wholesome food, if ripe, fully developed and free from even incipient decay. But, as every one knows, those conditions are exceptional in the early spring. We do not get genuine natural ripeness in tropical fruits which have necessarily been plucked when green and hard, however their color and softness may simulate it when they reach northern consumers. Vegetables too, from the South, may look very well and yet the process of fermentation, the beginning of decay, have already been commenced in their cells. And those forced in hot-houses, though crisp and fresh to eye and palate, may be in such a formative stage of development as to be difficult of digestion, bearing about the same relation to fully developed, garden-grown plants of their several species as very young veal does to good beef. Hence, the stomach, which is really a very sensitive organ, tough and complaisant as most persons seem to consider it—and the bowels, which are very prone to take offence, often conspire in rebellion against this early spring food. And the stomach—where the trouble, should any occur, is certain to begin—will very likely have, at this season, special reasons to impel and power to make effective its protest. The rich, stimulating and heating food of winter will have brought it to a normally over-heated, or practically feverish condition, with diminished digestive capacity. In its temperature, the already started fermentation of the vegetable cells is quickly developed, and when the mass of matter is passed on to the bowels it is an irritant certain to provoke unnaturally violent efforts for its speedy expulsion, or yet worse results should the liver and bowels have been made semi-torpid by over-work and ill care. The first indication of stomachic or intestinal trouble or derangement, however slight, should be met by the prompt taking of a good dose of some sufficient cathartic and purgative medicine, the best for such use being, no doubt, Ayer's Compound Cathartic Pills, and indeed prudence will prescribe the regular employment of these little regulators in such small doses as to serve for aids to digestion and preventives of possible troubles. One daily, after dinner, will be found wonderfully effective in this way in whatever way employed. They are exceptionally thorough yet mild in action and free from the drastic and subsequent constipative effects of other preparations offered professedly for similar service. No wonder they received medal and diploma at the Chicago World's Fair. There were none better.



What one Grocer says:

—"I hire clerks who can sell the goods that I tell them to sell—and of course I tell them to sell the goods on which I make the most money. If they can't do it, I won't have them. That's what I hire them for." This is an actual fact related by a grocer to our salesman—and it's a common fact; we have it daily. So, you see, when they tell you that some worthless or dangerous washing-powder is "the same as" or "as good as" **Pearline**, that's because it pays a larger profit. **Too** large, altogether, if clerks can be hired on purpose to make people take things they don't want and know nothing of, instead of a tried and proved article like **Pearline**. If your grocer sends you what you do not order, **be honest**—send it back.

Beware Peddlers and some unscrupulous grocers will tell you "this is as good as" or "the same as Pearline." IT'S FALSE—Pearline is never peddled, if your grocer sends you an imitation, be honest—*send it back.*

391 JAMES PYLE, New York

SOME DRINKS IN OTHER COUNTRIES.

A correspondent of the *New York Herald* says: It may be of some interest to your readers to know that almost the whole world is given to supplying distilled spirits to satisfy the appetite of mankind, and it would appear that the efforts made to suppress the desire for stimulants by the advocate of temperance is as impossible as to demand something in opposition to nature.

To give an idea of a few nations supplying the intoxicants, with their names and from what made, I herewith submit a few:—

Aqua ardiente, made from agave tree, in Spain.

Arrack, made from coarse sugar, in India.

Mahwah arrack, made from juice of palm, in East Indies.

Arraka, made from mare's milk, in Tartary.

Arraki, made from dates, in Egypt.

Arika, made from cow's milk, in Iceland.

Brandy, made from grapes, figs, etc., in Europe and America.

Frustung, made from sloes, in south of France.

Gin, made from barley and juniper, in Holland.

Gin, made from barley and turpentine, in England.

Goldwasser, made from barley and anise seed, in Dantzic.

Kirchwasser, made from cherry berries, in Switzerland.

Lau, made from rice, in Siam.

Maraschino, made from cherry berries, in Zara.

Curacoa, made from oranges, in West Indies.

Plante, made from cactus, in Mexico.

Rakai, made from husks of grapes, in Dalmatia.

Rassolio, compounded in Dantzic.

Seskis kayavodka, made from fruit, in Scio.

Slakavia trava, made from sweet grass, in Kamschatka.

Schowcho, made from rice, in China and Japan.

Rum, made from sugar cane, in West Indies and America.

Tuba, made from palm, in Phillipine Islands.

Whiskey, made from molasses and grain, in Europe and America.

Woohah, made from herbs, in Africa.

Y-wer-a, made from the root of the turoot, in Sandwich Islands.

Yrostir, made from grapes, on the Rhine.

Yung, made from rice, in the East Indies.

This list does not comprise all the spirits distilled by the different countries. A thousand or more come under head of manufactured or compounded.

◆

It should not be overlooked that most of the crowing about these great Chinese victories comes by way of Shanghai.—*St. Louis Republic.*

Lowenstein (despairingly), "Rebecca, I have failed in peezness."

Mrs. L.—"Vell, don'd put on dot long face. I vasn't one of your creditors.—*New York Sun*

◆

$100 REWARD, $100.

The readers of this paper will be pleased to learn that there is at least one dreaded disease that science has been able to cure in all its stages, and that is catarrh. Hall's Catarrh Cure is the only positive cure now known to the medical fraternity. Catarrh being a constitutional disease, requires a constitutional treatment. Hall's Catarrh Cure is taken internally, acting directly upon the blood and mucous surfaces of the system, thereby destroying the foundation of the disease, and giving the patient strength by building up the constitution and assisting nature in doing its work. The proprietors have so much faith in its curative powers, that they offer One Hundred Dollars for any case that it fails to cure. Send for list of Testimonials.

Address F. J. CHENEY & CO., Toledo, O.

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A SINGLE SENTENCE.

A recent issue of the *Troy Budget* contains this item:

An experienced traveler says: "This is the strongest single sentence I ever saw printed in a railroad advertisement, that I believe to be absolutely true:

"For the excellence of its tracks, the speed of its trains, the safety and comfort of its patrons, the loveliness and variety of its scenery, the number and importance of its cities, and the uniformly correct character of its service, the New York Central & Hudson River Railroad is not surpassed by any similar institution on either side of the Atlantic."

THE ARENA.

The *Arena* for October is a good, readable, interesting magazine, and, as usual, alone of its own kind. It opens with a clever and picturesque article on Mr. Henry D. Lloyd, who is known all through the great middle West as a student of and authority upon the economics of the labor movement. It is written by one of the ablest of Chicago journalists, Mr. Henry Latchford. Prof. Joseph Rodes Buchanan writes a forcible word on "The New Education," which is a severe arraignment of the cramming system. Dr. Buchanan believes in training the eyes and hands as well as the mind. A feature of this issue which should interest the women who follow current literature is a symposium of eleven women, representative of advanced social thought, in England, all sections of the United States and Australia. The contributors are Estella Bachman Brokaw, Altona A. Chapman, Sarah Mifflin Gay, Julia A. Kellogg, Frances M. Milne, Lona Ingham Robinson, Frances E. Russell, Catherine H. Spence, Charlotte Perkins Stetson, Eliza T. Twitchell, and Beatrice Webb of the London Fabian Society. The editor of the *Review*, B. O. Flower, writes of the increase of the military spirit in the States. Professor Heinrich Hensoldt, Ph.D., contributes the third paper in his interesting series on "Occult Science in Thibet," which has been so widely criticised and discussed. Dr. Sydney Barrington Elliott writes on the new psychological conundrum of Prenatal Influence Stephen Crane contributes a short story of considerable originality and power called "The men in the Storm." Carl Vrooman has a paper on the revival of debating societies in our American colleges and the new movement for intercollegiate debates on current problems, which will interest college men. The editor discusses Psychic phenomena in a spirit which merits attention. Rev. C. H. Zimmerman writes on "The Church and Economic Reforms." Prof. Thomas E. Will, Frank Parsons and James M. Brown make a valuable triangle of data and views on the problem of "The Unemployed." Walter Blackburn Harte balances much serious reading with a good natured, humorous paper on "The Advantages of Provincialism."

THE QUARTERLY ILLUSTRATOR.

The Quarterly Illustrator for October, November and December gathers in a store of summer memories. Through its pages one may live the outdoor season over again with any of the two or three hundred artists to whose near and distant haunts it shows the way. In "Art's Summer Outings" Alfred Trumble searches the continent over and concludes that the question is not where the artists are, but where the artists are not; and from the spirit in which he writes, the places where they are not will be considered by him as undesirable places until the presence of a white umbrella endorses them.

And yet *The Quarterly Illustrator* does not confine itself entirely to summer. Louis Moeller, whose subjects range through all the seasons of life rather than of the year, furnishes the frontispiece of this brisk number, and his illustrations accompany a terse, comprehensive criticism by F. Wellington Ruckstuhl. John Gilmer Speed follows with an interesting paper on the Cleveland School of Art, illustrated by sketches from the members. In another forcible article Clarence Cook laments the tendency of clever Americans to expatriate themselves and give to foreign subjects the ability which, by staying among its own people, might Americanize American art.

TABLE TALK.

For the housekeeper and the mother, the October issue of *Table Talk* holds much of interest. For the help of the former, three dozen tested recipes are given in the Inquiry Department, as well as menus for many occasions, while the latter will eagerly read much in "The New Bill of Fare" and the Fashion Department. "Another View of Woman's Work" is given by Helen Campbell, our great authority on domestic science and economy. It is well worth the charge of 10 cents a number, or $1.00 per year. A sample copy, free, is offered to our readers by Table Talk Publishing Company, Philadelphia.

CLIPPED RHYMES.

The Japs are severe
When they get on a "tear,"
And daily their valor increases;
With bullets that tell,
They are going pell mell,
And breaking old China to pieces!

—*Indianapolis Journal.*

Now little boys who had good health
The long vacation through,
Will be so sick when school bells ring
They won't know what to do.

—*Chicago Journal.*

The summer boarder sang this song,
"I'm saddest when I sing."
The rest were mighty sorry, too,
And loud "amens" did ring.

Brown, Jones and Smith have all got home,
No more from sport to sport they roam,
And now each freckled family
Must practice strict economy;
To hashes, liver, beans, pea soup,
Their pampered appetites must stoop,
For papa's pocketbook, it haps,
Is suffering from a big collapse.

SIGNS OF THE TIMES.

A man is lingering at the gate—
Some tramp or burglar, maybe;
Oh, no, he is a candidate—
He wants to kiss the baby.

—*Detroit Free Press.*

BACILLI IN THE AIR.

I ask a glass of water or of claret or of beer;
I go to kiss a pretty maid—she turns away with fear;
I eat some lemon jelly that's been standing on the sill,
And they tell me all are loaded and are warranted to kill,
I'm not much up in science, but I know a thing or two;
I know that if I do not eat or drink or kiss a few
Of these fashionable, dreaded germs I certainly will die,
For I'd have to give up breathing to escape the bacilli.
Bacteria, bacteria! I'm not afraid of you; -
The world will roll around the sun for all that you can do;
So on dollar bills and quarters and on kisses and on food
Just hand me common bacilli—I'm not a science dude;
And what's the use of living if you can not eat or drink,
If pretty girls and money and even printer's ink
And country fairs and pencils are only other terms
For the rapid-transit system of the scientific germs?

THE WORLD'S FOOD FAIR IN BOSTON.

Not over 4 per cent of New England's population visited the World's Fair, but the other 96 per cent of it, or so much of it as is of adult age and able to go anywhere, can attend the World's Food Fair of the Boston Retail Grocers' Association, to be held in the unsurpassed Mechanics' Building on Huntington avenue, Boston, commencing Oct. 1 and continuing until Oct. 27, 1894. At this Exposition will be many displays that were, last year, shown at the Columbian Exposition in Chicago. All the exhibitors are bestowing more than the usual attention to their displays and in artistic arrangement, variety and general interest the Exhibition this year will excel that of any ever given in New England.

Never in Boston were placed in an Exhibition so large, so attractive, so artistic booths as will be seen at the World's Food Fair. It is really surprising, the number of firms that secured space with special reference to its being of the size to admit placing therein said firms' Chicago exhibit. Yes, the building will be filled with these displays, and if the 1891 Exhibit was fine, that of 1894 will be magnificent.

Every inch available for exhibition purposes in Grand and Exhibition Halls, all the gallery space in Exhibition Hall, is being filled with food products of every kind, the outcome of man's industry, skill and ingenuity. In the basement will be the dairy department, and the Art Gallery and connecting rooms will be occupied by the home department.

When?

Your husband will notice a great improvement in your cooking, *when*

You use COTTOLENE

Your house will not be filled with the odor of hot lard, *when*

You use COTTOLENE

Your doctor will lose some of his Dyspepsia cases, *when*

You use COTTOLENE

Your children can safely eat the same food as yourself, *when*

You use COTTOLENE

Your money will be saved, and your cooking praised, *when*

You use COTTOLENE

Famous cooks, prominent physicians and thousands of everyday housekeepers endorse it. Will you give it a trial?

Sold in 3 and 5 pound pails, by all grocers.

THE AMERICAN COTTON OIL CO.

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The N. K. Fairbank Company,
CHICAGO,
St. Louis. New York.
Boston, Philadelphia, Montreal.

Rural child (in big city store). "What's those little red things that's shooting back and forth on wires up there?"

City child. "Oh, they is just to keep folks amused till their change comes."

"What sort of a girl is she?"

"Oh, she is a miss with a mission."

"Ah!"

"And her mission is seeking a man with a mansion."

Goldfish are of Chinese origin. They were originally found in a large lake near Mount Tsientsing, and were first brought to Europe in the seventeenth century. The first in France came as a present to Mme. de Pompadour.

Mustard plasters are best wetted with cold or only lukewarm water, since boiling water coagulates the albuminous matters and prevents formation of much volatile oil. Vinegar also kills the ferment and should not be used. The oil does not pre-exist in the mustard seeds, but is generated by fermentation, whish is prevented by a high heat.—*New England Druggist.*

DETECTIVES!

Bright, young and middle-aged men wanted in every locality * to act as **PRIVATE DETECTIVES** under instructions. * Previous experience not required or necessary. Send stamp * for full particulars and get sample copy of the best illustrated * criminal paper published. NATIONAL DETECTIVE BUREAU, INDIANAPOLIS, IND. * * * * * * * * *

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First Assistant Postmaster General, Frank H. Jones, sent the following matter to all postmasters, with orders to post the card containing it in their offices and call the attention of their patrons to it, that their mail could be returned.

"Don't mail your letter or valuable package without having your own address written or printed upon the left hand corner.

This will ensure its return to you if not delivered, and will prevent its being sent to and opened at the Dead Letter Office, Washington.

THE U. S. OFFICIAL POSTAL GUIDE warns us that over 5,000,000 pieces of mail matter go to the Dead Letter Office annually, containing many thousands of dollars; part can be returned to the senders and part cannot. If all letter writers would stick their *Printed Address* on their envelopes the Dead Letter Office at Washington could be abolished."

The above statement of the Post Office Department proves the great value of Gummed Addresses to every man, woman and youth who write letters. Think of it! Over 5,000,000 "dead letters" sent to the "Dead Letter Office" annually containing tens of thousands of dollars, etc., simply because the writers' addresses do not appear on the envelopes. This is a matter too important to be overlooked.

YOUR FULL ADDRESS Printed boldly on **1000** separate slips of postage stamp paper, 500 postpaid to you to stick on your **letters**, books, etc., and one each on **500 parcels of mail** from publishers, etc. to you, **no two alike**, together with our 16 page paper all for **10 cts.** Terms to agents, members of churches, schools, clubs, etc., 2 orders 18c.; 3, 25c.; 10, 60c.; 20 and over, 5c. each address. **O. I. C. U. R.** going to order. We've nearly 200,000 customers already. Many from your town. **Your P. M.** can give you their names. THE HERALD. Test No. 48 B. Lum St., Phila., Pa.

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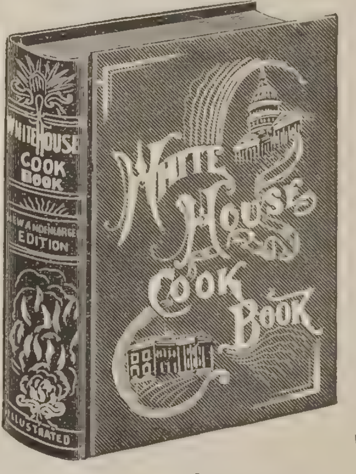

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HOUSEHOLD.

TESTED RECEIPTS.

Every receipt here given is original, has been practically tested by the AMERICAN ANALYST and is therefore confidently recommended.

BOILED RICE.

One half cup whole rice, boiled in just enough water to cover it; one cup of milk; a little salt; one egg, beaten light. When the rice is nearly done, turn off the water, add the milk and simmer—taking care it does not scorch—until the milk boils up well. Salt, and beat in the egg. Eat warm, with cream, sugar and nutmeg.

PANADA.

Six Boston crackers, split; two tablespoonfuls white sugar, a good pinch of salt, and a little nutmeg; enough boiling water to cover them well. Split the crackers, and pile in a bowl in layers, salt and sugar scattered among them. Cover with boiling water and set on the hearth, with a close top over the bowl, for at least one hour. The crackers should be almost clear and soft as jelly, but not broken. Eat from the bowl, with more sugar sprinkled in if you wish it. If properly made, this panada is very fine.

CUP PUDDING.

One tablespoonful of flour; one egg. Mix with cold milk, and a pinch of salt to a batter. Boil fifteen minutes in a buttered cup. Eat with sauce, fruit, or plain sugar.

APPLE PIE.

Slice up one or more nice, tart apples in a saucer; sweeten with white sugar, and cover with a moderately thick slice of bread buttered slightly on the under side. When the bread is browned, the apples, if of a tender kind and thinly sliced, will be done.

APPLE WATER.

One large juicy pippin, the most finely flavored you can get; three cups of cold water—one quart if the apple is very large. Pare and quarter the apple, but do not core it. Put it on the fire in a tin or porcelain saucepan with the water and boil, closely covered, until the apple stews to pieces. Strain the liquor at once, pressing the apple hard in the cloth. Strain this again through a finer bag, and set away to cool. Sweeten with white sugar, and ice for drinking.

BEEFSTEAK AND MUTTON CHOPS.

Choose the tenderest cuts and broil over a clear hot fire with your wisest skill. Let the steak be rare—the chops well done. Salt and pepper, lay between two hot plates three minutes, and serve to your patient. If he is very weak, do not let him swallow anything except the juice, when he has chewed the meat well. The essence of rare beef—roasted or broiled—thus expressed, is considered by some physicians to be more strengthening than beef tea, prepared in the usual manner.

PORTEREE.

One pint bottle best porter, two glasses pale sherry, one lemon peeled and sliced, one half pint ice water, six or eight lumps loaf sugar, one half grated nutmeg, pounded ice. This mixture has been used satisfactorily by invalids, for whom the pure porter was too heavy, causing biliousness and heartburn.

CALVES-FOOT JELLY.

Boil four nicely-cleaned calves' feet in three quarts of water until reduced to one, very slowly strain and set away until cold, then take off the fat from the top and remove the jelly into a stew pan, avoiding the settlings, and adding half a pound of white powdered sugar, the juice of two lemons, and the whites of two eggs—the latter to make it transparent. Boil all together a few moments, and set away in bowls or glasses; it is excellent in a sick room.

SALTED ALMONDS.—Salted almonds are very popular. A little practice will enable any careful workman to prepare them readily and well. Jordan almonds are best for the purpose. Blanch them by throwing boiling water over them, and then after they have stood two minutes, putting them in cold water and rubbing the brown skin off with the hand or a rough little cloth. When the almonds are all blanched and dried with a cloth, measure them. Sprinkle a tablespoonful of olive oil over every cupful. Let them stand two hours, then sprinkle a tablespoonful of salt over each cupful, mixing it thoroughly with a spoon. Spread them out on a bright tin biscuit pan and place them in a quick oven, where they will turn a delicate brown and become crisp and tender in from ten to fifteen minutes. They should be stirred every five minutes.

SPICE BUNS.—10 lb. flour, 4 lb. brown sugar. 2 lb. margarine, 3 oz. volatile salts, 1 1-2 oz. best mixed spice, 2 pts. milk, 12 eggs, lemon flavoring. 20 lb. dough weighed out in 1 1-2 oz. each would give 240 buns. Sift the spice with the flour, mix in the sugar, and make a bay. Powder and dissolve the salt in the milk, turn it into the bay, whip in the eggs, and the flavoring, and make a soft smooth dough. Weigh off pieces an ounce and a-half each, mould them round, place on buttered tins, flatten, and bake in a hot oven. While hot, wash over with egg wash.

CURLED SNAPS,—5 lb. flour, ½ lb. brown sugar, 4 lb. molasses, 2 lb. margarine, 2 oz. ground cassia. This will produce 15 lb. of dough, which weighed out at 32 snaps to the lb. Sift the sugar, flour and cassia together, rub in the margarine, and make a bay. Turn in the molasses and make a stiff dough. Mold it thoroughly, dust well, roll out to sheets as thin as a shilling, and cut into snaps with an oval cutter. Place them well apart on buttered tins, and wash the tops with a water brush. Bake in a warm oven. Slip a thin palette knife under the snaps while they are hot, remove them from the tins while soft, and lay them on round sticks to curl. When cold remove and pack away in a dry place.

A LESSON IN MENDING.

Every thrifty woman whose means are limited recognizes the necessity of keeping everything in useful condition as long as possible. And many women who have money to use lavishly take pride in this same thrifty economy, and thereby increase the list of their charities.

In these days really superior needle-women are the exception and not the rule. This is, of course, the result of sewing machines and ready-made garments. For there is nothing without two sides to it, and while these innovations are blessings to some women, they are exactly the opposite to many others.

Needlework is a feminine art; every woman who has not given her life to some profession or business that sets her aside from womanly duties should cultivate it.

And in all the branches of needlework, nothing calls for more skill than mending. It is impossible to make a garment that will not wear in some places more than in others, and it is the height of folly to cast the remaining goods aside because of the small portion that is spoiled.

Darning comes first in the modes of mending. Nice woolen goods should always be carefully darned with ravelings of the material; silk makes a shiny spot. Darn very neatly, taking care not to draw the goods. If the place is worn, a piece must be put on the under side; if the material is heavy, select a scrap of thinner material; if the place is only torn, do not put anything under the darn. After it is finished, dampen and press nicely. A great deal depends upon pressing.

Children's dresses usually wear out first in the waist and sleeves. Line cotton dresses with the material they are made of, so that when the top is worn a right side will show. This makes darning neater and easier. Make two pairs of sleeves or save material for a second pair. A little dress thus carefully planned will outlast two made in the usual way.

Bed clothes cost a good deal, and they are troublesome to make, so everybody likes to keep them as long as possible.

When sheets begin to get thin, open them down the middle and whip the outer edges together, hemming the sides. If you are a very busy woman and cannot take time for whipping, lay the selvage edges together so that they overlap flat, like a fell, and stitch on both sides with the machine. This is very nice, but not so neat as felling.

When the sheets begin to show tiny thin places, darn with soft cotton. When holes really come, as holes surely will, baste on square patches and hem them down neatly. Turn the sheet over, cut away the cloth under the patch, and hem down the raw edges. Turn corners nicely, use fine cotton, have the patch smooth, and take short stitches. The sheet will not be pretty as a new one, but it will be just as comfortable, and if there are little restless feet that play havoc with bed clothes, it will be just the thing. Keep the sheets away in pairs, and, many good housekeepers to the contrary notwithstanding, make no difference in top and bottom, nor in head and foot. Used as they come they wear much more evenly. The mended sheets would hardly do for the "spare bed," but if they are fresh and sweet, home people dream very pleasantly between them—sometimes of the nice things the saved money will buy, or of the drawer of snowy lavender-scented linen that is waiting until it is needed.

Pillow cases are harder to manage, because one doesn't like to feel a seam under one's cheek. Still they wear out and can't be thrown away. The woman who has little money makes plain pillow cases, perhaps from necessity, and her sister, who has money and loves comfort, makes them because they are better. A pillow is a thing to rest the head on when one is tired or sick or sleepy. In any of these conditions rough embroidery, fluted ruffles, or scratchy lace, are in the way. A pillow should suggest rest. It isn't an ornament, but a necessity. True, it should be white and dainty always. The ideal case is the old, old bag shape of nice fine material, fitting the pillow snugly, trimmed with lace along the hem, or left plain, ironed smoothly and folded the long way in narrow folds. If the pillow is just soft enough, it seems to me that even the crowned head, proverbially restless, might find peace thereon.

If the cases get beyond darning, they must be patched. Rip the seam and cut the opposite side back to the end seam. Now cut out the worn portion and sew in a piece to get the exact length you had before. Stitch up the old side seam and then the other made by cutting the side open. Of course you must rip the hem and put it back after the seams are sewn. This is neater and smoother than hemming a patch on.

Don't put "new cloth in old garments," but avoid the other extreme. Remember that where the wear has been it will continue to be. A piece too old will give way before the article is mended, and there is the work to go over.

Towels, when they begin to wear, should be darned with linen floss. If there is a hole, fill it just as you do one in a stocking. Do the work nicely, so it will not draw, and you need never be ashamed of a mended towel. Table cloth and napkins require the same treatment. When the table cloths must finally be given up, have them washed and ironed as usual, then cut from the sides and ends pieces for napkins. Fringe, or better, hem them, and they are very nice. The hem is better, because the material, already half worn, is not strong, and the hem strengthens the edges. Of course the pattern is broken and there is no border, but these napkins are much better than none; they are white and neat, and, at least, save better ones.

The other parts of the cloth are not fit for many things. Good wash rags are about all one can expect from them.

These suggestions may be of no use to the experienced housekeeper, who has for years been planning and darning and mending, but there are many young women who are puzzling over the unaccustomed cares of home-making, and to them we offer these gleanings from our own experience. And we would urge upon every woman who has a home the necessity of learning the use of the tiny implement whose office it is to keep human bodies covered with something better than fig leaves. Learn to sew—on the machine if you like, but certainly with a needle. Learn as your grandmother did. There is no greater accomplishment, and no deft-fingered woman finds it unattainable, though she may have failed at music, painting and typewriting. —*Reflector.*

MEDICAL.

CHRISTIAN SCIENCE AGAIN.

[E. M. Clark, M. D., Philadelphia, Pa., in the *Philadelphia Medical and Surgical Reporter.*]

If "Christian Science," the theme of Dr. Longsdorf's paper read at the recent State Medical Society and published in *The Medical and Society Reporter* of August 11th, were not a misnomer, it would long since have found ardent advocates among two very pronounced classes of the community, viz: professing christians and men of science, especially of medical science.

The purpose of the writer, however, is not to discuss the theories and claims of this so-called science and its votaries, but rather to appeal to members of our own profession to make more practical use of the one very important truth which forms the warp and woof of all the flimsy sophisms of Christian Science.

Dr. F. C. Herr (*Medical and Surgical Reporter*, September 8th) says, very pertinently, "I am quite sure that Dr. Longsdorf must have made a grave error when she says that 'Christian Science must not be confounded with hypnotism, animal magnetism, faith or mind cure, spiritualism, clairvoyant or other trance or the old-time powwowing process.' If Christian Science is not these things, we have abundant reason for alarm, but it is the same old imposter in masquerade dress."

We well may relegate the thing itself to the domain of quackery, and assume towards those who claim to be healers under its provisions, the same attitude that the medical man always takes in the presence of pretension without foundation. He ignores and is indifferent.

With any critical analysis of the basis upon which Christian Science, along with other allied subjects, rests, we cannot fail to see that the domination of mind over mind easily persuades to a belief in the domination of mind over matter. So far, the advocates of all such methods of healing are rational and scientific in their belief.

Certainly in these days of experimental physiological research, no well-read physician will dispute the fact that mind, or mentality—the volitional and automatic processes of cerebration—does to a great extent modify and control the ever varying conditions of the material man.

Foster (Physiology, Part III, Central Nervous System) says: "Consciousness, as we recognize it, seems to be necessarily operating as, or to be indissolubly associated with, the presence of an incessantly repeated internal stimulus, and we cannot conceive of that failing to excite mechanisms of movement." If this be true, then given an influence to bear upon our patient sufficient to bring about that incessantly repeated internal stimulus, and what results may we not hope to accomplish.

It seems almost futile to mention illustrations along this line—they will readily recur to all. Pathological conditions most varied and remote are known to result from violent and sudden emotions of either fright or anger, grief or joy. Happiness is a fine cosmetic and is just as sure to promote health, as worriment and care are known to be prolific sources of that faulty metabolism which, sooner or later, results in disturbed function, and may result in almost any visceral lesion.

What are the various functional neuroses but the product of perverted nerve action? We repeat, mental states have produced diseased conditions almost innumerable, from the simplest vaso motor disturbances familiar to all, as pallor and syncope, to even the more complex clinical picture of diabetic coma[*] from nervous shock. Dyspnœa, cough, emesis, the inhibition of reflex movements through a counter stimulus, menstruation influenced favorably or unfavorably, the salivary secretion induced or exaggerated by smell or sight of food, even pain ignored and therefore practically expelled by diverting the mind—these are but a few of the physical phenomena occurring in consequence of certain mental states. Apropos of this same truth is Professor Poutain's very interesting article on "Emotional Icterus" (*Medical and Surgical Reporter*, September 15th), which he asserts, "If primary, may be cured without drugs if the patient be in a tranquil state of mind." If disease can be induced thus, it certainly behooves the physician to endeavor to find a way to reverse the process, that he may substitute harmony for discord and ease for disease.

Referring to the many undoubted cures wrought by these would-be scientists—Christian or otherwise, Dr. Longsdorf says truly, "To a rational thinker there is no mystery about the process," but we think she errs in assuming that "it cannot be rationally explained so that the subject of it can clearly understand."

That is one of the strongholds of these occult methods—those who practice them trade upon the gullibility of the weak in body and mind. Whereas the regular physician may use not only all the resources of his medical art, but should also use all the powers of his trained mind to dominate the mind of his patient and teach him how to use his own will towards the betterment of his physical condition.

The successful practitioner knows that he owes his success to something more than his efficacious prescriptions; just how large a factor in his personality and the power he possesses to win the confidence of and to control his patient, he may not be able to determine, but he certainly is conscious of it.

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[*] Philadelphia Polyclinic, September 15th.

Kant has said, "In our moral consciousness we find ourselves under a law which calls upon us to act as beings who are absolutely self-determined or free, and which therefore assures us that our intelligent self is our real self."

Let the wise physician demand that his patient be his intelligent self, and act accordingly. Let him seek to arouse the moral consciousness of his patient to a sense of his own inherent power. Let him endeavor at least to induce that tranquil state of mind wich certainly assists not only nature but the doctor to work marvellous cures. It may not be quite so easy as to prescribe pills and potions, but this moral consciousness once aroused will become a mighty adjutant to the proper physiological action of whatever therapeutic measures may be instituted. It is like Aristotle's fulcrum, "A fixed point on which reason can set its lever as a secure basis from which to move the human will even against the opposition of all the powers of nature." The neurologist understands this truth and makes use of it. Why should not the general practitioner do the same in selected cases? Where the nervous element is a factor in initiating a diseased condition or in the continuance of it, there is a field and a large one for mental therapeutics.

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PRACTICAL CHRISTIAN SCIENCE.

Doubtless there have always been, since the memory of man, those who in moments of suffering have plaintively cried out "Oh, to be nothing, nothing!" This species of weeping philosopher has ever been with us. But it has remained for recent years to develop his legitimate successor. Only lately has there risen in our midst that type of thinker who never pleads to be nothing—for, in point of fact, in accordance with his own philosophy, he already is nothing. He does not exist. He admits that he is supposed to live, eat, drink, breathe, enjoy and suffer, but emphatically denies that he really does all these things. He declares that he is not. His joys are not. His sufferings are not, His pains are not —but he experiences considerable difficulty in making himself and a skeptical public really believe that they are not. Theoretically, when his tooth aches it does not ache. The jumping pain is but a figment of his disordered imagination—a result of sin, if he belong to that particular wing of psychic enthusiasts yclept Christian scientists. Let him, then, but pray long enough and loud enough and hard enough, and his tooth ache will vanish. This reads well on paper, but it is quite noticeable that in real life the Christian scientist is fully as prompt as his unenlightened neighbor in calling upon a material and sinful dentist.

This is, however, at least a promising spark of truth amid the volumes of sophistical smoke generated by these fallacious reasoners.

There is doubtless a mind, a spiritual entity, separate and distinct from, and yet closely attached to, the material body. There have been, and are, those who dispute this—but their reasoning has been set at naught by the demonstration, and to-day's general acceptation, of the wonders of hypnotism. Again, this mind, this dominating spiritual entity, possesses more or less control over the physical condition of the material organism. This fact is quite generally appreciated. Every physician sees it daily demonstrated at the bedside. Courage, hope and confidence in his doctor are worth everything to the sick man.

Theoretically there seems to be no reason why this same mental force which helps to cure disease may not be so used. A determination not to acquire a contagious disease, by toning up one's nervous resistance to that disease, may prove an effective safeguard. Fear produces a relaxed, weakened condition of the organism which is most favorable for the reception of disease-producing agencies. Why is it that physicians so seldom succumb to the dangerous contagious maladies? There seems to be no doubt that the indifference born of familiarity is a powerful factor in the doctor's favor.

There is, then, a practical side to so-called Christian science and its various congeners. There is a germ of truth which every man may utilize to his own advantage. Nor is it at all necessary, in doing this, for one to pray himself and his diseases into a cipher. So stupendous an effort to hoodwink one's self is not needful. Let one but realize that he is a duel entity, that his spiritual being can, to a greater or less extent, modify and control his physical being, and he has all there is to Christian science in a nutshell. It matters little whether his prayers be long or short. If a brief invocation can give him that needed confidence, he has saved just that much time and brain-power. If he have the confidence, with no invocation at all, he is that much ahead. The confidence, and that only, is needed. And its proper use may save him many a long hour of suffering.—H. D. in *N. W. Sanitarian.*

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What to Do in Case of Burns.—The pain from slight burns is very great. An excellent application is a thick paste of common baking soda moistened with water, spread on a piece of linen or cotton, and bound on the part, writes Elizabeth Robinson Scovil in an article on "What to Do in Emergencies" in the March Ladies' Home Journal. This can be kept wet by squeezing water on it from a sponge or cloth until the smarting is soothed. A thick coating of starch can be used instead of the soda, or wheat flour if nothing better can be had, but neither should be applied if the skin is broken. In this case it is better to use vaselin, olive or linseed oil. The doctor will apply some preparation containing carbolic acid. If the air can be effectually excluded from a burn, the pain is relieved. Blisters should be pricked and the fluid absorbed with a soft cloth before dressing. If the clothing adheres to the skin, the loose part should be cut away and the patches of material soaked with oil or warm water. When the injury is extensive the sufferer will be prostrated and may die from the shock. Heat should be applied to the extremities and over the heart, and hot drinks given until the doctor comes. In burns from a strong acid the part should be covered with dry baking soda or lime, as the alkali will neutralize the acid. No water should be used, but cosmoline or oil applied after the alkali has been brushed off. When the burn has been caused by an alkali, an acid must be used. A person recovering from the effects of a burn requires very nourishing food.

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Why Fruit Skins Should Not be Eaten.—Fruit skins carry germs, and are no more intended for human sustenance than potato skins, melon rinds, or pea pods. Dr. Maria Duncan says: The bloom of the peach is a luxuriant growth of microbes, that of the grape only less so; and when these skins are taken into the stomach, they find most favorable conditions for their lively and rapid development, which causes the decay of the fruit before it is possible to digest it. This is the reason that many people think they cannot eat raw fruit. If they would in all cases discard the skin, they could derive only good from the fruit itself. Nature provides the skin for the protection of the fruit from the multitude of germs which are ever ready to attack it, as is evidenced when the skin is bruised or broken in any way—the microbes at once begin their work of decay, and the fruit is unfit for food.

Children are the chief offenders in respect to this rule, and should be carefully watched and frequently cautioned. A daintiness as to the condition of fruit should also be cultivated, to prevent its being eaten unripe or too old, on the verge of decay. Remember that it is sweet and ripe fruit, in prime condition only, that is recommended.—[Health.

ADULTERATION.

SEIDLITZ POWDER INVESTIGATION.

Actuated by a curiosity to know the quality of the laxative the bargain hunter obtains when he purchases 19-cent seidlitz powders, we have inquired into the nature of the article supplied by a few of the best known cheap stores. Results are given below:

1. R. H. Macy & Co., Sixth avenue and Eleventh street, well-known department store. Blasé girl at counter nonchalantly handed out a package, 18 cents. Tin box bearing on its cover a label reading, "Improved Seidlitz Powders," containing one dozen each of white and blue powders, the box wrapped in outer paper of usual style and literary character, Macy's label pasted on.

2. E. Ridley & Sons, Grand, Allen and Orchard streets, department store. Drug department of cheapest appearance, stocked with a miscellaneous lot of quick-selling patent medicines and cheap druggists' sundries. Waited upon by an impertinent and careless miss of about 14 years, whose spare time was spent in squabbles with subordinates of tenderer age. She was found perfectly willing to recommend any article called for. The package of powders sold for 19 cents, contained in a tin box, with no label, the outside wrapper being exactly like that of Macy's, the firm name having been placed on it with rubber stamp.

3. Bloomingdale Bros., Third avenue and Fifty-ninth street, department store. Only by a great effort, apparently, could the presiding genius at the drug department, an indifferent young woman who seemed unconscious of one's presence, bring herself to wait upon the customer, but did relinquish a box of seidlitz powder for 19 cents. A rather neatly gotten up package, tin box, no label on box, outside wrapper yellow, bearing firm name, and caution, "None genuine without signature, J. B. Snow, M. D." It was noticed that some fifty or more other lines of preparations of popular use were gotten up in the same distinctive style, and bore the same caution. "J. B. Snow, M. D.," is a poor doctor if all his medicines are of equally miserable and fraudulent character with his seidlitz powders.

4. Smith's Pharmacy (open all night), 363 Bowery. For 25 cents the clerk, who looked with suspicion at the customer, handed out the poorest looking package we have ever seen. The cheap (very cheap) pasteboard box contained ten powders (ten, mind you, not twelve) folded in a very slovenly manner, in cheapest of paper, no label on box, the whole wrapped in cheap and cheaply printed paper.

5. Church's Dispensary (H. C. Miner), 188 Bowery, drug store. Neatly put up package, tin box,

label on cover, wrapper buff-colored paper printed.

6. Hegeman & Co., 196 Bowery, cutters. Tin box, labeled, in cheap white printed wrapper, cost 25 cents. Was delivered by clerk without wrapping up.

7. Weismann & Mullenbach, 9 Bible House. Drug store advertising cheap prices. Tin box, lithographed label, outside wrapper reproducing design, price 25 cents. In lid of box a circular advertising cheap goods, a majority of the names of manufacturers being unfamiliar in the general trade.

8. Alex. Hudnut, 218 Broadway, 22 cents. In neat pasteboard box, printed label on cover, the outside pink wrapper bearing a guarantee of full weight and very best materials.

9. William B. Riker & Son Co., 353 Sixth avenue, New York. The handsomest package of all, 25 cents. A neat lithographed tin box, hinged lid, label on lid, and every other available portion of space bearing advertisements of others of the firm's goods.

Nearly all of the packages characterized their contents as "superior" or "improved." A tabular presentment of the results of the weighing of the different samples is given below:

NO.	From Whom Purchased.	PRICE.	GRAINS. Weight of Contents of 12 powders. WHITE.	GRAINS. Weight of Contents of 12 powders. BLUE.	GRAINS. Average Weight of One Powder. WHITE.	GRAINS. Average Weight of One Powder. BLUE.	GRAINS. Actual Weight of One Powder taken at Random. WHITE.	GRAINS. Actual Weight of One Powder taken at Random. BLUE.
			(U.S P 416.61.)	(U. S. P. 1913.32.)	U. S. P. 35.71.)	U. S. P. 159.44.)		
1	R. H. Macy & Co.	18	311.22	1555.80	25.93	127.98	23.27	135.56
2	Ridley	19	349.33	1611.04	29.11	134.25	30.11	125.44
3	Bloomingdale	19	721.35	1016.06	60.11	84.76	53.51	99.36
4	Smith (10 powders)	25	471.38	1496.86	47.13	149.68	46.62	161.85
5	H. C. Miner	25	474.62	2337.95	39.55	194.83	37.02	202.91
6	Hegeman Corporation	25	503.76	1988.22	41.98	165.69	40.38	160.16
7	Weismann & Muellenbach	25	407.96	1979.33	33.99	164.94	34.17	159.94
8	Hudnut	22	459.35	1949.89	38.26	162.49	38.09	160.47
9	Riker	25	455.79	1917.02	37.98	159.75	37.64	155.07

By comparison of the above weights with those of the weights of the U. S. Pharmacopœia standard, the suspicious samples are easily picked out.

But what of the composition of the powders. No quantitative estimations were attempted, but quantitative examination showed, contrary to expectation, Rochelle salt in each blue powder, though varying widely in several samples, in Nos. 1, 2, 3, 4, being present in small amount only. These four samples appear to have been made with the sole idea of getting them up cheaply. They are of the poorest and cheapest quality of material, they all lack very appreciably in the expensive Rochelle salt (the blue powder being nearly entirely sodium bicarbonate) are under weight, and no attempt has been made to adjust them with reference to chemical construction and union. One of them (No. 4) still further imposes upon the public by supplying but ten powders, when twelve are generally given (and getting full price). We unhesitatingly condemn these four powders.

The remaining five powders (5, 6, 7, 8, 9) are believed to have been put up in all honesty of purpose, though 5 and 6 have been rather carelessly prepared, No. 5 being especially a little too generous in weights.

It is difficult to understand why any one should wish to cheapen this article. With the best of material and full weights there is sufficient margin to allow of good printing, paper and boxes, and a fair profit even at the cutter's price. In a whole box the difference between good and poor material is insignificant.

The question of the medicinal value of the powders brings up another phase of the subject. In sample No. 3 it required three of the blue powders to neutralize one of the white.

The patient, in taking the powders, then receives in addition to tartrate of sodium a dose of free bicarbonate of sodium equal to two-thirds of the weight of the blue powder.

The entire investigation shows that the department stores have no conscience as regards the quality of the cheap drugs they sell. Pure materials for seidlitz powders are cheap enough to allow good profit on honestly prepared goods, but these concerns are not satisfied with this. One of the most essential ingredients, Rochelle salt, is nearly or quite omitted, and replaced by sodium bicarbonate. The former costs 18½ to 20 cents per pound, the latter 3½ to 4 cents per pound. There should be some way of punishing those who so willfully tamper with and adulterate the medicines of the people. It is not outside the province of the Board of Health to look into the matter. A fair presumption is that other lines of medicines, put up for these concerns to sell, would well reward investigation. As a rule, the actual makers of these goods are unknown, and the personality of J. B. Snow, M. D., who vouches for the quality of Bloomingdale's medicines, is as yet undiscovered.

The showing made above is plain, and we commend it to all interested in the matter.—*Pharmaceutical Era.*

A BLOW AT A FRAUD.

The *Academie de Medecine*, of Paris, as the result of a close investigation of the trade in the so-called "natural" mineral waters of France, has arrived at the following conclusions, which are put in the form of recommendations to the legislative bodies:

1. That the sale of natural waters, impregnated with supplementary gases, should not be allowed.

2. Every application for permit to carry on the business of the sale of natural mineral waters should be accompanied by certificates, made before the proper authorities, that the waters handled, or to be handled, by the applicant, have not been so prepared (i. e., by supplementary carbonification), and by a further certificate on the part of the owner of the spring, or of the source of the water, that he has not had recourse to supplementary gasification.

3. All reservoirs used for mineral water should be made air-tight, and should be emptied at least once in every twenty-four hours; they should be so constructed that the water of the spring flows directly into them, and, further, all bottles and containers should be thoroughly sterilized, and all impurities of every description should be removed before they are offered for sale.

4. These regulations should be at once imposed and all proprietors of springs of mineral waters should be forced to put them in practice within three months from date.

In France the recommendations of the *Academie* carry almost the weight of an order, and there is but little doubt but that the above regulations will soon be in force, so far as commercial waters for home consumption is concerned. If they are made to apply to all waters, those for export as well as those for domestic use, there will be a fearful falling off in exports, as it is well known that every single bottle of foreign, so-called "natural" carbonated waters—not merely those of France, but those of Germany, Austria and other countries—that goes abroad, goes charged with supplementary gas. Not merely this; but nearly every one of them is doctored otherwise to an extent that should remove them entirely from the category of natural waters.

Everyone who has given the matter any attention knows that the mineral contents of nearly every natural spring vary with the seasons, becoming more concentrated in long dry spells and correspondingly weakened by rainy periods. In order to make the yield uniform the proprietors are forced to add water from other sources in the first instance, and to supplement the natural salts by the addition of artificially prepared chemicals in the second. The gasification is nearly all supplementary.

From "doctoring" the true waters of the springs to manufacturing the product outright is but a slight step, and hence we find some of the great mineral water companies annually exporting to America, alone, millions of bottles of water in excess of the output of their springs. By a strange ruling of our customs officials these manufactured mineral waters have been allowed for years past to come into this country as "natural waters," and thus not merely to enter into competition with our domestic products, natural and manufactured, but to "hold the age" on the latter as "the product of nature's laboratory," a fetich of great power among the unthinking multitude.

The steps suggested by the *Academie*, by showing the French people what poor stuff their natural waters really are, may have the effect of waking other governments up, and thus lead to legislation in this direction. If so, nothing but good can come of it.—*National Druggist.*

DANGEROUS CANNED TOMATOES.

It is perhaps little known that there has recently been introduced to and used by the manufacturers of canned goods and preserves a substance for coloring tomatoes. In tomatoes of impaired quality of color a single drop of the preparation will considerably repair this defect, and even in standard goods it is said that a marked change for the better takes place. The coloring matter is one of the most extensively used of the so-called aniline colors—eosin. It is prepared and put up in bottles bearing a label "tomato color."

Only very minute quantities are necessary for the purpose sought, and it is hardly supposable that sufficient would ever be added to render the food prejudicial to health. Its physiological action has not, we believe, been studied. The practice, however, is to be deplored, since it is a deceptive one, and no advantage can accrue from it to the consumer. On the contrary, there are possible disadvantages. To persons afflicted with chronic disease it is not possible to state what aggravation it might cause, since nothing as yet is known as to the physiological effects of eosin. As a warning, however, we have for an example the now extensive use of salicylic acid as an antiseptic in food preserves. Medical science has proved this to be injurious, particularly in kidney disease, and its use is now universally condemned.

The use of eosin, or more exactly bromeosin, the compound used, is more particularly to be condemned, however, for its deceptive properties. There is no property it possesses that can be of advantage to the consumer, while injurious or inferior foods may be thrust upon him at the prices of more perfect ones.

There are chemical means, quite simple, of detecting its presence in preserved tomatoes, and the fraud is thus made an easy matter of discovery. The method in simplified form is as follows:

Strain off the solid matter and to the juice add a few drops of pure hydrochloric acid (muriatic acid) and shake this with ether. Draw off the ether which will contain the coloring matter, and agitate this with a dilute solution of caustic soda. The soda solution will contain the bromeosin, and will have a reddish-yellow color with a fluorescent appearance. Some of the natural coloring matter of the tomatoes will also be extracted, and, unless the fluorescence is apparent it will be necessary to further remove this by acidifying the soda solution and repeating the operation by extracting with ether and shaking with dilute caustic soda solution, when the fluorescence will appear. If doubtful results are obtained, it would be advisable to submit a sample for professional examination.

A SAD WHISKY STORY.

A firm of New York whisky dealers, having a contract with James E. Pepper & Co., of Lexington, Ky., the distillers of the celebrated Pepper whisky, by which they were entitled to the entire output of bottled whisky from that firm, brought suit against the grocery firm of Joseph R. Peebles' Sons Co., of Cincinnati, and sought an injunction to prevent that firm from putting up Pepper whisky under the regular firm label. This case is of no interest to our readers, but in the decision rendered by Hon. William H. Taft, U. S. Circuit Judge for the Southern District of Ohio, some startling facts have come to light. The learned judge in reviewing the facts of the case on which he bases his decision speaks as follows:

"It is proven and admitted that Jas. E. Pepper & Co., for the eighteen months preceding July, 1893, instead of bottling pure, unadulterated Old Pepper whisky, have bottled a mixture of Pepper whisky and other whiskies, of which mixture thirty-five per cent was not Pepper whisky. In some months the mixture contained less Pepper than foreign whisky. In other months it contained more. The average proportion of Pepper to other whisky, however, in the output of eighteen months was as 65 to 35. To bottle such a mixture and sell it under the trade label and caution notices above referred to is a false representation and a fraud upon the purchasing public. A court of equity can not protect property in a trade-mark thus fraudulently used. It is not material whether the foreign whisky mixed with Pepper's is as good, or better, whisky than Pepper's, or whether the mixture is better than pure Pepper whisky. The public are entitled to a true statement as to the origin of the whisky if any statement is made at all. The complainants and Pepper are not to be protected in a deception of the public, even if it works to the advantage of the public. It is hardly necessary to say that the statement that the whisky is pure Pepper whisky is material. The importance attached in the whisky to the fact that bottled whisky is the make of a particular distillery is manifest both from common knowledge, and also from the great particularity of statement and variety of proof offered of this in the various bottle trade-marks and labels shown in this case.

"Pepper offers as an excuse for bottling a mixture that the demand for his goods had so increased that he could not supply it with Pepper whisky. What was this demand for? Plainly for pure and unadulterated Pepper whisky, bottled at the distillery. If this could not be honestly supplied, then it could not be supplied at all in such a way as to keep the business within the protection of a Court of Equity.

"Whether Peebles, by selling as agent of Pepper and complainants, the distillery bottled goods connived at the sale of the mixture as pure Pepper whisky after he knew its exact origin, or not, is wholly immaterial. Relief is refused Pepper and his privies because of his misrepresentations to the public."

Comment is needless. This exposure may perhaps explain why a great deal of Pepper whisky lately found on the market tasted as if the bar keeper had sophisticated it. No doubt Pepper whisky will still be sold, but if it ever regains its old popularity is a question which we cannot answer.

HYGIENIC.

THE ANIMAL PARASITES WHICH WE OBTAIN THROUGH OUR FOOD.

BY C. H. WARDELL STILES, PH. D.

[Zoologist, Bureau of Animal Industry U. S. Department Agriculture.]

Popular Health Magazine.

As I am to show you some of the animal parasites which we may obtain from food, permit me to invite you all to lunch with me for half an hour or so, that you may see some of the wonderful objects it is possible for us to swallow without knowing it. The repast, to which I now invite you, is not such a one as you would yourself prepare, but it is one which might be prepared by the ignorant and slovenly servants of ladies who consider it a disgrace to know anything about household matters. For your comfort, however, I will tell you that a number of the parasites which I shall mention are not found in Washington, except as specimens in the various scientific collections.

The first course consists of soup—let it be any kind you wish, bouillon, mock-turtle or anything else. As we are about to take a spoonful we notice a curious object floating around in it, which on closer inspection turns out to be a small beetle (*Blaps mucro nata*) closely related to our death-watch beetle. If we swallow this bug, the insect itself would not injure us in the slightest, for it would be digested, but, according to the investigation of an Italian zoölogist, a little organism lives in this insect which, upon coming into our digestive tract and becoming free from the body of the bug, develops into the parasite known to the scientist as a thorn-headed worm (*Echinorhynchus moniliformis*). This is a curious worm, about 2 to 4 inches long with a strong proboscis on its anterior end, armed with several rows of hooks. Like many other parasites, it possesses no intestine. but, fastened with its head in the wall of our digestive tract, it floats in the contents and absorbs nourishment through its entire outer surface. For your comfort I will state this is not a common parasite in man, but lives in rats. The rats scatter the eggs around, and these are swallowed by beetles, in which the larval form develops. When the insects are eaten by rats, or persons, the larvæ then develop into the adult and the life-cycle is thus completed. It may be interesting for you to know that when the Egyptian ladies wish to become stout, they are said to eat a beetle of this genus, and thus they lay themselves open to possible infection with these worms. Perhaps instead of finding a *Blaps* in our soup, we discover some other bug, say a small butterfly, by the name of *asopia farinalis*, or a beetle known to scientists as *akis spinosa*. In that case, instead of becoming infected with the thorn-headed worm, we should have caught a small tape worm (*Hymenolepts*).

You may think I have stretched a point by saying that these bugs may be found in soup, but I assure you that it is not an uncommon occurrence to find insects in soup, and that people swallow these insects, containing the germs of various parasites, is shown by the fact that the parasites I have mentioned occur in man, and that the only way he could possibly catch them is by swallowing the insects I have referred to.

While our soup plates are being removed we unconsciously nibble at a piece of bread, at the same time that we are discussing the weather or some other equally exciting topic. Now let us suppose that this bread was cut by our cook—who, as I intimated, is not the most cleanly person in the world. The cook may herself be infected with pin-worms; she has unconsciously gotten some of the microscopic eggs upon her hands, and in cutting the bread has unconsciously transferred them to the bread. They are too small for us to see, and in eating the bread we accidentally become infected with these germs. Pin-worms (*Oxywris vermicularis*) are among the most common animal parasites found in human beings; probably fully one-fourth, possibly one-third, of the persons in this room have at some time during his or her lifetime harbored these creatures. If only a few worms were present we were not troubled very much, but if many were present we probably were quite unhappy for the time being, notwithstanding the enormous doses of soothing syrup or other mixture which our well-intending mothers gave us to keep us from being so restless during the night, little suspecting what the real cause of our restlessness was!

These parasites are, as I have said, very common, and may be obtained through solid food which has been handled by persons who are affected with them, and are not careful enough about washing their hands, or they may be obtained through unfiltered or unboiled drinking water, or through milk, when the milk can, before leaving the farm, or even afterwards, accidentally (?) stood for a few minutes too near a contaminated water supply.

If our servant has allowed the lid of the bread-box to stand open, and the mice have gotten in there, they have scattered on the bread microscopic parasites known to to the zoölogists as *Megastoma intestinale*, and as we eat the bread we become infected with these germs also.

Our fish has now been served. Some of us have taken pike, others have taken turbot, still others have chosen some other fresh-water fish, but the essential point is that the fish has not been cooked enough. As we are eating this fish, one of us, who perhaps has sharper eyesight than the rest, discovers a white object, about one-fourth to one-half inch in length, which differs slightly from the muscle. This object upon closer inspection proves to be the germ or larval stage of the broad Russian tape-worm (*Botkriocephalus latus*), which is the largest parasite found in man. The worm grows to be 32 feet in length. I spoke of it as a worm. In ordinary parlance we generally call a tape-worm a single animal, but scientifically speaking, the tape-worm is a colony of animals. The head, provided with two suckers by means of which it holds fast to the walls of our intestinal tract, is what we have swallowed, as a germ or larva, with the fish, and represents the mother of the colony; while these segments, of which there may be hundreds, each represent individual worms of a second generation, the mother and all her daughters remaining joined together as a colony. It may be a satisfaction for you to know that this parasite is rare in America.

As our fish-plates are removed and we are waiting for the next course, consisting of meats, we introduce a new topic of conversation by taking a sip of unfiltered and unboiled water. It would have been better, perhaps, had we not taken that particular drink, for we have the risk of swallowing the germs of a number of different parasites

We might, perhaps, have swallowed the eggs of the ordinary lumbricoid worm (*Ascaris lumbricoides*), of which I show you several specimens in this bottle, and of which you see some figures on this chart. This is one of the most common of the parasites found in the human species. I do not know how common it is in Washington, but I have records of examinations of 7,547 persons in certain European cities, and of this number 962 persons, or 12.7 per cent, or about one person in every eight, were infested with this worm, and there is no reason to suspect that this worm is any less frequent in this city. It is especially frequent among school children, negroes and idiots, in fact among all classes of people who are not cleanly about their personal habits, and who drink unfiltered or unboiled water. In cities like Paris, where the entire water supply is filtered, the worm is exceedingly rare.

If we happened to be in Egypt, or in certain parts of Asia, we might have become infected with another worm, the guinea-worm by name (*Dracunculus medinensis*), which some scientists look upon as the fiery serpent of the children of Israel. This parasite, of which there is probably only one specimen in the United States, is about a yard long and lives under the skin; it produces large swellings, accompanied by an intense burning sensataion, hence the name fiery serpent or fiery dragon which it retains to the present day. The parasite is caught by swallowing small crustaceans in unfiltered drinking water, for the larval stage of this worm lives in these minute crabs, *Cyclops* by name.

Although we are not liable to catch the fiery serpent of the children of Israel in this part of the world, there is a somewhat similar parasite which we do stand in danger of catching. This worm, which scientists call a thread-worm (*Filaria Sanguinis hominis*), lives in various parts of the body; the young embryos of the worms are found in the blood and are so small, about 1-1000 of an inch long, that a large number may be found in a single drop of blood. Now, when mosquitoes bite a person infected with these worms, the insects swallow a number of these microscopic germs along with the blood. The worms grow somewhat while in the body of the mosquito, and then when Mrs. Mosquito, after spending four or five days digesting her meal, goes to some body of water to deposit her eggs, the worms are ready for the next step in their life-history. After the mosquito dies and falls into the water, the young worms devour the internal organs of the insect, leave the mosquito and swim around until they are swallowed by the person who is careless enough to drink unfiltered or unboiled water.

In some other parts of the world, another very curious animal is caught from the water, an animal about half an inch long, which spends its earlier stages in a small crab, but which after being swallowed by man, lives in the large veins in his abdomen and causes a very serious disease.

But we have caught enough parasites from that drink of water—let us pass on with our lunch. We have before us on the table a number of different kinds of meat. Some of us may prefer tongue, or roast beef; others may prefer pork of some kind, say roast pork, boiled ham, or if we are inclined towards German customs, we may take some duck stuffed with sausage. Let each one select his or her own meat, and I will tell you what parasite you have swallowed, taking it for granted that all of the meats are underdone.

Those who have chosen beef in any form, as tongue, roast beef, smothered beef, steak, or stuffed veal, etc., have run the risk of catching the so-called beef-measle tape-worm (*Tœnia saginata*). This is the most common of the eight different species of tape-worms found in man. It is generally fifteen to thirty feet long and is made up of a head and about 1,200 to 1,300 segments, each one of which you will recall represents a separate worm. These small bladder-like structures, about the size of a small bean, resemble bits of fat to a certain extent. These are the objects you swallow when you catch a beef-measle tape-worm. This cyst contains a tape-worm head, bearing four suckers. When this is swallowed, segments begin to form very rapidly. In treating for tape-worm, it is always necessary to get rid of this head, for if that remains in the body the tape-worm will grow again.

Those of us who chose pork chops, roast pork, ham, or duck stuffed with pork sausage, have of course escaped the danger of becoming infected with the beef-measle tape-worm, but have run the risk of catching a smaller but still more dangerous tape-worm, *i. e.*, the pork-measle tape-worm (*Tœnia solium*). The object we swallow in this case is almost identically the same object we would have swallowed had we eaten beef. The bladder-worm (*Cysticercus cellulosœ*) lies in the muscle, surrounded by connective tissue, and as it comes into our stomach, the surrounding cyst is digested. The head and neck pass to a point in our digestive tract a little way below our stomach, and then begins the formation of segments, the segments always forming near the head, so that the last segment, that is, the segment furthest from the head is the oldest, while the segment nearest the head is the youngest.

I said that this tape-worm is more dangerous than the beef tape-worm. Not because it causes us more pain while in the digestive tract, however, but because the microscopic embryos, which are formed in the segments, can under certain conditions bore through the intestinal wall and reach the inside of the eye or some other part of the body, and there develop into a bladder worm. In this way, man, as well as hogs, may become infested with pork-measles.

But this is not the only parasite we have run the risk of catching in eating half-cooked pork. We may have eaten a piece of meat infested with the much dreaded trichinæ.

These trichinæ are curious little creatures, and although they are objects of considerable fear to the physician, who knows only too well that if these parasites once gain access to a patient's muscles, he is utterly powerless to reach them and kill them with any medicine known, yet to the zoölogist these worms are of considerable interest.

They are very small, as you will believe when I state that as many as 350,000 may live in a single pound of meat. These minute worms live inside of the muscle-fiber of pork, coiled up like a spiral, with a small cyst around them. When we eat this pork, the meat upon coming into our stomach is digested and these minute cysts are liberated. The juices of our stomach then dissolve the cysts and Mr. and Mrs. Trichina pass down below our stomach and proceed to make life unpleasant for us. Mrs. Trichina becomes the mother of about 10,000 to 15,000 wriggling youngsters within a month's time, and these latter bore through our digestive wall and journey to the muscles. Upon arriving at some muscle which they find to let, they bore into it and proceed to take possession of the contractile substance. The more of the contractile substance the trichinæ eat, the less there is for us to use in swallowing, breathing, walking, etc. After some weeks, however, the parasites have satisfied their appetite, and they become encysted, and our muscles present the same appearance which the pork had before we eat it. If our physician has succeeded in stimulating us up to the stage when the parasites become encysted, we will recover from the disease, and the trichinæ will do no further harm, until we go to Africa as missionaries, when the savages may suddenly discover that they have a bad case of trichinosis, should they not allow us to carry on our work unmolested. I should not, however, advise that we require candidates for the missionary field to first become infected with trichinæ in order to discipline the cannibals, but had our first delegation of missionaries passed through the disease of trichinosis before going to their fields of labor, the savages would by this time have learned that it was dangerous to use missionaries as an article of food.

I stated that we obtained our trichinæ from half-cooked pork, but you may wonder how the hogs became infected. The matter is very simple indeed. These parasites are also found in rats, and as the hog is very fond of rats as a *delicatesse*, the hogs catch the parasites by eating rats. Rats keep the infection among themselves by eating each other, for rats are cannibals.

We have, perhaps, not noticed that the odor of the meat brought our favorite dog to the dining room. He is practically a member of the family and petted by all, none except the scientists looking upon him as anything except a most faithful friend, old Dog Tray! The scientist, however, is hard-hearted enough not to appreciate this friendship, and believing the proper place for a dog is the cellar, the barnyard, the dissecting room, or the dog pond, he hygenically looks upon the dog as his enemy. Nevertheless, some of you do not share these opinions, and as the dog comes to you, you pet him and allow him to sniffle and lick your hand. But let us look for a moment at the animal parasites which the dog has given to you during that short caress!

Beloved old Dog Tray has in his nose a parasite about two to five inches long, a so-called tongue-worm (*Lingatula rhinaria*); in sniffing and licking your hand he has deposited there some microscopic eggs, and the next time you take a piece of bread you will transfer these eggs on the bread to your mouth. The eggs will be swallowed and the germ will bore from your digestive tract into your liver, and there develop into a parasite about one-quarter to one-half an inch long.

Or in caressing the dog, you have unconsciously gotten a flea or a louse upon your hands, perhaps under your finger nails, and later you have swallowed that. It may now be a comforting thought for you to know that inside that flea or louse, there lives the larval stage of a tapeworm (*Dipylidium caninum*) with which you have become infected. But that is not all.

The most dangerous animal parasite which man has is a so-called hydatid, which is the larval stage of a small tape-worm (*Tœnia echinococcus*) found in the dog. From the very nature of the habits of the dog we must not be surprised to find the eggs of this tape worm upon his coat. Petting him, you get these eggs upon your hands; from hands to your mouth is but a short distance; you swallow the eggs and become infected with the dreaded *Echinococcus!* The *echinococcus* develops in your liver, in your lungs, in your brain or elsewhere, and you suddenly discover the fact too late—perhaps it is not you who discovers it after all, but the physician who makes your post-mortem—that the dog is your enemy rather than your friend. I am not now referring alone to the miserable collections of animated bones and dog-skins which wander into our city from Virginia and Maryland, but I refer to mamma's darling little poodle as well. In fact, from statistics it appears that this hydatid parasite to which I refer is most frequent among the dirty Icelanders who live in the same huts with their dogs, frequently sharing the same plate, and next in frequency in women who keep pet lap-dogs.

But our salad has come on the table. This salad—let it be any kind you prefer—was grown in a rather damp field; the year was perhaps an unusually damp year; and Bridget or Amanda is particularly lazy to-day and did not wash the salad as well as she would have done had she expected that you would inspect the various courses before they came on the table. Let us see what parasite we swallow this time.

First of all, we swallow a most remarkable animal, known as the common liver-fluke (*Fasciola hepatica*), a parasite which is not very frequent in man, but one which is more common in sheep and cattle. A parasite which in 1830 killed more than 2,000,000 sheep in England, causing an estimate loss of $20,000,000; and one which killed 1,000,000 sheep in Buenos Ayres in 1882; a parasite which kills hundreds of cattle and sheep in Texas every year, and has recently swept off nearly all the cattle on some of the Sandwich Islands. This parasite lays about 45,000 eggs, in each of which, under favorable conditions, a small ciliated embryo develops; this embryo swims around in the water until it finds a certain swamp-snail, into which it bores its way. Upon coming to rest (as a sporocyst) it produces a third generation (redia) which is, however, very unlike the first or second. This produces still another different generation (cercaria) which leaves the snail and encysts itself into some plant, say the kind used in our salad. When we swallow this cyst, the animal seeks out our liver and developing into the adult, proceeds to make trouble for us.

Nor is this the only fluke which we might catch in eating salad. A smaller one, the lancet-fluke of Germany (*Distoma lanceolatum*), or the Japanese liver-fluke (*D. sinense*), may be gotten in this way. The Chinese lung-fluke, which also lives in cats and tigers, and which Dr. Ward has recently found in this country, might make their homes with us, brought to us by improperly prepared salad.

But I have introduced enough parasites to you to show you the necessity of preparing food carefully before it is placed upon the table. I hope I have not taken your appetite away for your meals to-morrow by making you disgusted with food, although I cannot say that I should feel very sorry if I had made you disgusted with pet dogs. Remember, that if your food is properly prepared, if your drinking water is boiled or filtered, and if you keep dogs from becoming too intimate friends with you, there is absolutely no danger of your catching any of these parasites that I have mentioned, but, if you will insist upon allowing your pet poodle the privilege of the dining room, if you are careless about boiling or filtering your drinking water, and if you allow your careless servants to prepare your food as they wish, you in the meantime feeling it beneath you to enter the kitchen and see how matters are going on, you lay yourselves open to infection not only by these parasites of which I have spoken, but by many others.

INVENTIONS, SCIENCE, ETC.

THE WORK OF DUST.

Dust has a very large share in nearly all the phenomena of the earth's atmosphere. It is what makes the clear sky appear blue; and when we look up into the sky we see the dust in the atmosphere illuminated by the sun. There is nothing else before us that can permit the light to reach the eye. Light goes invisible, straight through all gases, whatever their chemical composition The dust catches it, reflects it in every direction, and so causes the whole atmosphere to appear clear, in the same way that it makes the sunbeam visible in the darkened room. Without dust there would be no blue firmament. The sky would be as dark as, or darker than, we see it in the finest moonless nights. The glowing disk of the sun would stand immediately upon this dark background, and the same sharp contrast would prevail upon the illuminated surface of the earth—blinding light where the sun's rays fall and deep black shadows where they do not. Only the light of the moon and the stars, which would remain visible in the daytime, would be able to temper this contrast in a slight degree. The illumination of the earth's surface would be like that we see with the telescope on the lunar landscapes; for the moon has no atmospheric envelope that can hold floating dust. We then owe to dust the even moderately tempered daylight, adapted now to our eyes; and it is that which contributes much to the beauty of our landscape scenery.

But if dust makes the sky appear clear, why is the color of the sky blue? Why does dust, of the different constituents of white sunlight, reflect the blue rather than the green, yellow or red? This fact is connected with the size of the dust particles. Only the finest dust settles so slowly that it can be spread everywhere by means of the air currents, and can be found constantly in all strata of the atmosphere; and special importance can be ascribed only to these finest particles. The coarse parts soon fall to the ground. Let us consider the fine mechanism of light, the extremely short ether waves which determine its existence. These waves, although they are of even less than microscopic size, are not all equally long. The shortest are those that give blue light, while all the other colors are produced by longer waves. The fine atmosphere dust contains many particles which are large enough to reflect the short blue ether waves, fewer than can reflect green and yellow, and still fewer large enough to reflect the long red waves. The red light, therefore, goes on almost without hindrance, while the blue is more liable to be diverted, and thus to reach the eye. A similar phenomenon may be observed on a larger scale on water which is roughened with waves of different lengths, and on which pieces of wood are floating. The pieces of wood stand in the same relation to the water waves as the dust particles to the ether waves. The great long waves pass the block undisturbed, only rocking up and down; while the finer ripples of the water are turned back, as if the blocks were firm walls.

The finest dust thus appears blue. There is much coarse dust in large towns, when the sky over them is often gray, while only the finest blue dust is carried up in the country. The dust is also variously assorted at different heights above the surface of the earth. The coarser dust will be found at the lower levels, where it is produced. On mountains we have most of the dust beneath us, while the rarefied air can sustain only the finest floating particles. Hence the sky on high mountains is clear and deep blue, even almost black, as if it were without dust. Only when we look at the lower strata, toward the horizon, does the color pass into gray.

Why is the sky in Italy and the tropics of a so much deeper blue than that of Western Europe? Is the dust there finer? It is really so; not that a finer quality of dust is produced there, but because in the moist climate of the North Sea countries the dust cannot float long in the air without being charged with water and made coarser, while in warmer countries water exists in the air as vapor and does not become condensed as a liquid on the dust. Only when it is carried by the air currents into the higher strata and is cooled there, does it thicken into clouds. With this we come to the most important function of dust in our atmosphere—the part which it has in the function of rain, by reason of vapors condensing upon it. It can be affirmed with certainty that all the water which the sun causes to evaporate on the surface of the sea and on the land is condensed again on dust, and that no raindrop falls unless it had a particle of dust as its primary nucleus.

Without dust there would be no condensation of water in the air—no fog, no clouds, no rain, no snow, no showers. The only condensing surface would be the surface of the earth itself, Thus the trees and plants and the walls of houses would begin to trickle whenever cooling began in the air. In winter all would be covered with a thick icy crust. All the water which we are accustomed to see falling in rainpours or in snow would become visible in this way. We should at once feel on going out of doors that our clothes were becoming wet through. Umbrellas would be useless. The air, saturated with vapors would penetrate the interior of houses and deposit its water on everything in them. In short, it is hard to conceive how different everything would be, if dust did not offer its immeasurable extent of surface everywhere to the air. To this we owe it that the condensation of water is diverted from the surface of the earth to the higher, cooler atmospheric strata.—*Popular Science Monthly.*

THE ENGLISH LANGUAGE.

The principal languages which compete with English, not considering such as Chinese and Hindostanee, are French, Spanish, Russian, and German. French is practically stationary as regards the number of its adherents; Spanish is largely spoken in South America and the southern part of North America, but it owes its prominence to the colonizing genius of its speakers; where German is introduced it rapidly gives way to the native tongue, generally English; Russian, like the German, has little influence upon the Western civilization. It is a remarkable fact that, while the English in their colonies and offshoots have absorbed millions of aliens, there is no record of any great body of English speakers having become absorbed by any other race.

In the United States there are millions of Germans and other foreigners who have become merged with the English speakers in a single generation, they losing even their family names; and the children in many cases do not understand their parents' language. In Canada, however, the French speaking population is increasing faster than the English speaking. This is not because the French element absorbs the English, but because it crowds it out. While the French is seldom absorbed by any other tongue, it is almost always absorbed by the English. The English has practically driven the French out of Egypt, and it is rapidly driving the Dutch out of Africa. This has been accomplished in Egypt within a dozen years. The change in Africa is being effected with even greater rapidity. As the English-speaking settlers rush into the new country, the Dutch and other languages, which are rarely to be met with, drop into the backwoods and are finally lost. Africa is witnessing a repetition of the fight of the tongues in America three centuries ago, which resulted in a victory for the English. The history of lingual development in America alone is a sufficient argument for the prediction that no languages, excepting possibly those of the Orient, will long remain formidable competitors of the English.—Troy (N. Y.) *Press.*

A SUBSTITUTE FOR COFFEE.

The agricultural experiment station of the Purdue University of Indiana has issued a circular setting forth the qualities of the soy, or soja bean and advocating its use as a substitute for coffee. The soy bean (*soia hispida*) is a Japanese plant which can be grown in this country. Thus far its cultivation has been confined to the West, and it is, apparently, not known in the East.

It is described as a stiff, bushy plant, which under favorable circumstances attains a height of three feet. There are three large leaves on a leaf stem. From the axils of leaves flower shoots grow, which, with maturity, produce pods in clusters of two and three. Each pod contains from two to four seeds, about ¾ of an inch in breadth, and a little longer than broad. One plant often produces a large number of pods. A farmer in Tippecanoe county, Ind., has raised 782 beans on one stalk from a single planted bean, and had 16 bushels of beans from one acre. He has used the soy bean for coffee for seven or eight years, and considers it the best substitute.

The seed is planted in rows about 30 inches apart with a bean every eight or nine inches in the row. While May is the time for planting, a good crop has been gathered at the Purdue station from seed planted in the middle of June. When the beans are ripe enough the plants are pulled up and dried in stacks, after which they are threshed, generally with a flail.

Analyses of samples of the soy bean grown at the Purdue station and of the true coffee bean are compared in the following table:

	Soy Bean.		Coffee.	
	Unroasted.	Roasted.	Unroasted.	Roasted.
Moisture	6.36	.78	11.19	3.19
Fat	18.34	1.61	13.23	15.63
Protein	32.93	37.83		
Fibre	5.50	26.56	27.72	24.27
Ash	5.81	6.73	3.48	3.75
Carbohydrates	51.6	06.49	34.77	39.78
Total nitrogen	5.27	6.05	1.87	2.31
Albuminoid nitrogen	5.13	5.64		
Real albuminoids	32.10	35.27	8.48	12.05
Caffeine	....	....	1,18	1.88

The cost of the soy bean is said to be very much less than the low grade coffees and those of which chicory and other adulterants form a part.

Inquiry among coffee merchants in this city discovered that the soy bean as a substitute for coffee was not commercially or otherwise known here. According to an expert who has been a coffee taster for nearly a quarter of a century, chicory is the only thing which can be considered a substitute for coffee. By substitute he means adulterant, using the word in a good sense. Chicory alone, as prepared by the improved process now in use, is not half a bad drink, but no one would dream of considering it coffee who had ever tasted the real article. Chicory, however, mixed with a good grade of coffee is a better and more wholesome drink than some of the low grade coffee. The expert said that while he and his partners sold pure coffee to their customers

Announcement to Physicians.

NOTE! Scott's Emulsion is now put up and sold by all druggists in a small or fifty-cent size, although the large size is still on the market. We have made this departure to enable you to prescribe Scott's Emulsion in the original package for a trial where Cod-Liver Oil is indicated. It will also insure the genuine Scott's Emulsion being given when a small quantity is called for.

FORMULA: 50 per cent of Finest Norwegian Cod-Liver Oil; 6 grs. Hypophosphite of Lime; 3 grs. Hypophosphite of Soda to the Fluid ounce.

SAMPLE of Scott's Emulsion delivered free to the address of any Physician in regular practice.

PREPARED BY SCOTT & BOWNE, CHEMISTS,

Scott & Bowne Building, New York.

unless ordered otherwise, they used coffee mixed with chicory themselves.

Chicory, although considered the best adulterant, is not the only one. Several of the cereals play a part in the preparation of cheap coffee, if they do not pretend to be substitutes. It is said that the entire Canadian pea crop and a large part of the Michigan crop are devoted to the adulteration of coffee. Rye and barley are also used as adulterants.

There is a general impression prevalent that chicory and the other coffee adulterants are detrimental to health. The authority already cited says that, on the contrary, pure coffee is more harmful than the adulterants. They, indeed, are harmless, while the evil effects of coffee taken in large quantities are well known. He spoke particularly of chicory as not prepared.

The cereals used as adulterants of coffee, he thought, were also harmless, but he was apparently doubtful as to the healthfulness of Boston brown bread used as a potation.—*New York Sun.*

◆

ARTIFICIAL PRODUCTION OF CITRIC ACID.

Mr. C. Wehmer, in carrying on experiments upon the production of oxalic acid by fungi, has found a genus (to which he gives the name *Citromyces*) that has the remarkable power of converting carbohydrates into citric acid. Of the genus, he describes two species, *C. Pfefferianus* and *C. glaber*. Their ordinary mode of multiplication is by conids, but they occasionally produce other structures, which may be sclerotes or asci; and a yeast-like budding also occurs. The production of citric acid is in the first place due to oxidation of the carbohydrate, and is dependent on the presence of oxygen. The most favorable nutrient substratum for its formation is a moderately concentrated solution of sugar. The change is probably due to a process of oxidation represented by the following equation:

$$C_6H_{12}O_6+3O=C_6H_8O_7+2H_2O.$$

A full description of the conditions under which it takes place is given in a paper that was communicated to the Berlin Academy of Sciences last June. This mode of producing citric acid is now being worked at Thann and Mulhausen, and there is a prospect that, in addition to its scientific interest, it will be of industrial importance.

In connection with this subject, the *Kew Bulletin* calls attention to the interesting coincidence that citric acid has been found in sugar cane juice, and that it sometimes makes its appearance during the process of sugar manufacture.

◆

MERCANTILE CHRISTIANITY.

Don't ask the merchant 'bout his creed
Or theologic range,
But try his goods, inspect the weights,
And careful count your change.

Twelve inches to a foot 's a psalm;
"Old hundred" 's dealings fair;
And sixteen ounces to the pound
May be your grocer's prayer.

—*E. B*

A smoke nuisance: the cigarette.

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ACKER, MERRALL & CONDIT and PARK & TILFORD.

DIOVIBURNIA UTERINE, TONIC, ANTISPASMODIC AND ANODYNE.

A reliable and trustworthy remedy for the relief of Dysmenorrhœa, Amenorrhœa, Menorrhagia, Leucorrhœa, Subinvolution, Threatened Abortion, Vomiting in Pregnancy and Chlorosis; directing its action to the uterine system as a general tonic and antispasmodic it is unexcelled.

FORMULA.—Every ounce represents 3-4 dram each of the fluid extracts: Viburnum Prunifolium, Viburnum Opulus, Dioscorea Villosa, Aletris Farinosa, Helonias Dioica, Mitchella Repens, Caulophyllum Thalictroides, Scutellaria Lateriflora.

ST. LOUIS, MO., June 23, 1888.

I have used DIOVIBURNIA enough to satisfy myself of its merits. It is of unquestionable benefit in painful dysmenorrhœa; it possesses antispasmodic properties which seem to be exerted especially on the uterus.

Dr. H. Tuholske

Professor of Surgery, Post-Graduate School.

ST. LOUIS, MO., June 18, 1888.

I have given DIOVIBURNIA a fair trial, and found it useful as an uterine tonic and antispasmodic, relieving the pains of dysmenorrhœa and a regulator of the entire uterine functions. I feel authorized to give this recomendation.

L. Ch. Boisliniere

Professor of Obstetrics, St. Louis Medical College.

ST. LOUIS, MO., June 18, 1888.

For more than a year I have prescribed DIOVIBURNIA. In those cases that I have been able to follow up, found that they derived much benefit from its use in almost every form of dysmenorrhœa—especially the conjestive form. I am so pleased with it that I now prescribe it almost daily.

T. L. Papin M. D

Physician in Chief and Gynecologist to St. John's Hospital.

ST. LOUIS, MO., June 20, 1894

I very cheerfully give my testimony to the virtues of a combination of vegetable remedies prepared by a well known and able pharmacist of this city and known as DIOVIBURNIA. I have employed this medicine in cases of dysmenorrhœa, suppression of the catamenia, and in excessive leucorrhœa, and have been much pleased with it. I do not think its claims (as set forth in the circular accompanying it) to be at all excessive.

Jno. P. Johnson

Professor of Principles and Practice of Medicine, St. Louis Medical College.

DOSE.—For adults, a dessertspoonful three times a day, after meals. In urgent cases, where there is much pain, dose may be given every hour or two, *always in hot water.* Put up in Eight Ounce Bottles.

To any Physician, unacquainted with the medicinal effect of Dioviburnia and Neurosine, we will mail pamphlets containing full information, suggestions, commendations of some of the most prominent professors in medicine and various methods of treatment. Or to those desiring to try Dioviburnia and Neurosine, and will pay express charges, we will send on application a trial bottle of each.

DIOS CHEMICAL COMPANY, ST. LOUIS, MO.

AN IMPORTANT DISTINCTION.

Blood loaded with effete matter from tissue waste, thickened with viscous foreign matter, taken up by demoralized assimilative organs and tainted with the germs of hereditary or infectious disease, is commonly characterized as "impure." But that is altogether too mild and inadequate a term and is not scientifically correct. It should properly be called vitiated, or poisonous blood. All the blood that flows through our veins and arteries is alternately "pure" and "impure" in the course of its circulation through the vascular system.

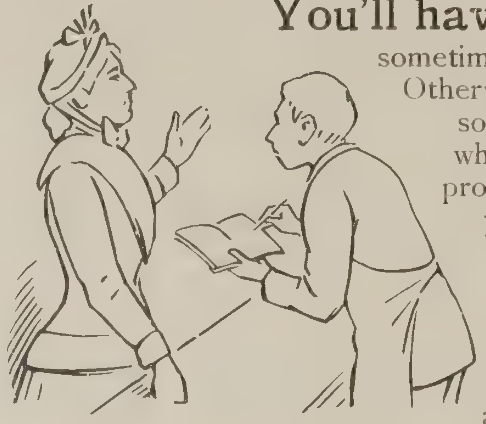
That which flows from the left side of the heart into the system's arteries is pure, or arterial blood. As it traverses the system's capillaries, it parts with certain of its constituents to nourish the organs and tissues, and as it receives from them their waste products it becomes impure blood, in which condition it flows back to the right side of the heart by the system's viens as veinous blood.

The blood which flows from the right side of the heart along the pulmonary artery is thus impure blood, but as it traverses the pulmonary capillaries it is purified by the action of air in the lungs, and is changed into arterial or pure blood, in which condition it flows back, by the pulmonary veins, to the left side of the heart.

In other words, the pulmonary circulation reconverts into pure blood that which has been rendered impure during its passage through the systemic capillaries. So much of the work of purification nature provides for and, in a normally healthful condition of the organism, performs perfectly. She takes care of the legitimately made waste from the processes of life. But when to that is added a mass of polluting matter accumulated in the blood, from the imperfect action of the organs by which the component parts of it are extracted from food, and those by which such matter should be eliminated and excreted before the vital fluid enters into the circulation, that nature unaided is incapable of doing away with. She can only protest and warn by symptomatic ailments more and more aggravated as their cause continues increasing in force, until she is forced to succumb under the persistent injury.

And that course is run all the more speedily when the germs of hereditary disease or the taint of infectious disorders become factors in the problem. Blood thus vitiated never recovers its purity, unless nature is aided by potent alterative medicines. To delay remedial treatment in the hope that nature will herself effect a cure is suicidal.

Any indication in abnormal condition or action of the organs, even the languor and depression that may not seem directly traceable to disorder in any, but is really an evidence of deteriorated tone in the nervous system, should be met at once by a systematic course of Ayers' Compound Extract of Sarsaparilla, the only perfect alterative medicine known. Its components, Honduras Sarsaparilla, yellow-dock, stillingia, etc., are the most efficient alteratives afforded, and their efficacy in the combination effected in this preparation has been indubitably demonstrated by world-wide experience during more than half a century.



You'll have to Insist, sometimes, upon getting **Pearline.** Otherwise, grocers may give you some poor imitation of it, which pays them a larger profit, but which it will not pay you to use.

It isn't enough to **order Pearline.** See that you **get** it. It has grown into favor so rapidly that it has not only brought out a host of imitations, but it has led people to call any powdered soap, washing-powder, or so-called washing compound—anything in the way of a powder for cleansing purposes—**Pearline.** This is all very flattering to **Pearline,** but if it's these imitations that you've used, you can't be enthusiastic. 402 JAMES PYLE, New York.

CLIPPED RHYMES.

AT THE CONSUL'S OPEN DOOR.

The *Boston Transcript* publishes this poem of Bret Harte's probably not before in print. An Englishman named Fowler having procured money from American consuls and others on the pretence that he was a destitute American citizen, a note of warning was sent from Bristol, Eng., to all our consuls in Great Britain. When it reached Bret Harte, who was then consul at Glasgow, he sent the following reply:—

I'm acquainted with affliction,
Chiefly in the form of fiction,
As 'tis offered up by strangers
  At the consul's open door;
And I know all kinds of sorrow
That relief would try to borrow,
From a sixpence upward
  To a p'un' or more.

I think I know all fancy
Styles of active mendicancy,
From the helpless Irish soldier
  Who fought in our country's war.
And laid in Libby's prison—
In a cause that wasn't his'n,
And I sent him back to the country
  Which he never saw before.

I know the wretched seaman,
Who was tortured by a demon
Captain till he fled in terror,
  With his wages in arrear;
And I gave to him sufficient
To ship as an efficient
And active malefactor
  With a gentle privateer.

I know the worthy tourist,
Who by accident the purest,
Lost his letters, watch and wallet,
  From the cold deck coming o'er;
And I headed his preamble
And lent him enough to gamble,
Till he won back all his money
  From the cold deck here ashore.

I have tickets bought for mothers,
And babies who were another's,
And husbands that not always
  Could be claimed as theirs alone,
Till I've come to the conclusion
That, for ethical confusion
And immoral contribution,
  I have little left undone.

But I never, never, never,
In beneficient endeavor,
Fell into the snare
  That the Saxon fowler spread,
And it seems to me a pistol,
Used judiciously at Bristol,
Would not too prematurely
  Have brought this matter to a head.

My girl and I last Sunday went
  To Coney Island by the sea;
And, as I broke the Sabbath day,
  The Sabbath day, alas! broke me.

—*N. Y. Herald.*

THE NURSERY MAID'S LULLABY.

Hush-a-by, baby,
And feed on your fist,
Papa's gone to the club
And mamma plays whist.
By baby bunting,
Don't get in the dumps;
Pa's knocking down pins,
Ma yells, "What is trumps?"

◆

HOW'S THIS?

We offer One Hundred Dollars reward for any case of Catarrh that cannot be cured by Hall's Catarrh Cure.

F. J. CHENEY & CO., Toledo, O.

We, the undersigned, have known F. J. Cheney for the last fifteen years, and believe him perfectly honorable in all business transactions and financially able to carry out any obligation by their firm.

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Hall's Catarrh Cure is taken internally, acting directly upon the blood and mucous surfaces of the system. Testimonials free. Price, 75 cents per bottle. Sold by all druggists.

WHAT WILL THE NEW YORK CENTRAL DO NEXT?

After having his thirst whetted, like a tiger by the taste of blood, by the wonderful performance of Engine No. 999, the genie who presides over the transportation department of the New York Central Railroad is rampant again, and laboring persistently to find means of attaining the speed of lightning. He is at work in his cell, by stealth and at midnight, and before many moons have passed we expect to see a terrible apparition coming up the Hudson river like the war chariot of Jove.

We may expect a monster engine, with double boilers of enormous power and wheels as tall as a shot tower,—which will trot up to Albany in an hour, skip over to Utica or Syracuse at half an hour schedules and cover the distance from New York to Buffalo in three hours. Then we shall find some means of artificial respiration.—*Medford (Mass.) Mercury.*

THE QUARTERLY ILLUSTRATOR.

This instructive journal for November contains 323 illustrations by 189 well known artists, and the following articles: "A Sculptor's Opinion of a Painter," by F. F. Wellington Ruckstuhl; "The Cleveland School of Art," by John Gilmer Speed, "An American Wilkie," by Clarence Cook; "Round About the Kit Kat," by Nym Crinkle; "A Dream Painter," by Lyell Carr; "Art's Summer Outings," by Alfred Trumble; "A Foreground Figure," by Marguerite Tracy; "Tyrolean Peasantry," by Edward King; "American Scenery," by James H. Chapman; "My Surprise Party," by Hugh M. Eaton; "Monda," a novel, by George Parsons Lathrop; "Cattle and Cattle Painting," by Mary T. Hart; "From Thought into Form," by Mary T. Earle; "Studios of English Royal Academicians; "A Few Portraits and Studios"; "Eighteen Portraits of American Artists"; "Far from 'The Day's Beginning' by Owen Risque. Published by Harry C. Jones, 9294 Fifth avenue, New York.

WM. B. WARNER & CO. AT ANTWERP.

At the Word's Fair Exposition at Antwerp William R. Warner & Co. were awarded the grand prize for the purity and excellency of their preparations.

MISCELLANEOUS.

AMERICA.

A BOY'S ORIGINAL COMPOSITION ON THIS THEME.

America is a very big place, it is bound around the edges with water. It was discovered by Christopher Columbus. There are a good many people in America, if there wasn't quite so many it wouldn't be such hard times, but there ain't enough work for 'em all.

There is all sorts of people in America, they come from everywhere on the face of the globe. And I just reckon they think America a great big orphan asylum, and they come here to be took care of. There is white people and black people, and injuns, but they ain't Americans. There is two classes of people. One class is the men, the other class is the jail birds, the lunytics, the idiots and the women. Father says women don't belong there, but I asked him if they didn't belong to the class that couldn't vote, and he didn't say nothin' more.

I'm awful glad I'm a boy, cause when I'm a man, I'll marry some black eyed girl to wait on me, and shine my shoes, for I don't like to do that. If was a girl, I'd wish I was a boy, for boys are real live Americans, and girls ain't nothin. We have a President in America, when he don't go fishin, but the old style kind, like George Washington, didn't live to grow up in these days, cause there too good. Father says we must have an American and I'm going to try to be President.

CHRISTOPHER WASHINGTON.

Newark, N. J.

TO RENDER FABRICS, ETC., FIRE-PROOF.

The following methods, proposed by T. M. Martin, have received official approval:

1—FOR LIGHT FABRICS.

Ammonium sulphate....	8 parts.
Ammonium carbonate..........	2.5 "
Borax..............	2 "
Boric acid......................	3 "
Starch	2 "
Water.........................	100 "

Dissolve the salts, which should be pure, and particularly free from iron, in a sufficient quantity of the water. Add the starch, previously made into a jelly with boiling water, and lastly the rest of the water. Impregnate the fabric with the solution, dry it and iron it.

In place of 2 parts of starch, 0.4 part of gelatin or 0.4 part of dextrin may be used.

A quart of the solution may be sufficient for about 16 yards.

2—FOR WOODWORK, ROPES, STRAW MATS, BAGS, ETC.

Ammonium chloride,	15 parts.
Boric acid,	6 "
Borax,	3 "
Water,	100 "

Immerse the articles for fifteen or twenty minutes in the solution, heated to 100° C. (212° F.), press and dry.

3—FOR PAPER.

Ammonium sulphate,	8 parts.
Boric acid,	3 "
Borax,	2 " .
Water,	100 "

Heat to 50° C. (122° F.) and impregnate the paper.—*Polyt. Mittheil.*

TO THE "'94s."

The class of '94 stand up—
Well, well, a goodly show;
And now in good old English tongue
Please tell us what you know—

But stop. It is too early yet,
You've got but printed lore;
Wait till the world has hazed you rough
Some sixty years or more.

Then those who've reached the higher thought
Will answer, At our school
There's but one erudition—Love,
One teacher—Golden Rule.

E. BRADSHAW.

Newtonville, Mass.

HE HAS HOSTS OF SYMPATHIZERS.

Lord Aberdeen tells the following story of himself: He left London at midnight in a sleeping-car for the north. In the morning when he was awakened he saw a stranger opposite him.

"Excuse me," said the stranger, "may I ask if you are rich?"

Somewhat surprised, his lordship replied that he was tolerably well to do.

"May I ask," continued the stranger, "how rich are you?"

"Well, if it will do you any good to know," was the reply, "I suppose I have several hundred thousand pounds."

"Well," went on the stranger, "if I were as rich as you and snored as loudly as you I should take a whole car so as not to interrupt the sleep of others."

"By Jove, what a superb view there is from here!" said Wilkins.

"Yes," said Dawkins. "Tell me one of your jokes now, will you? I fancy I could see it up here."

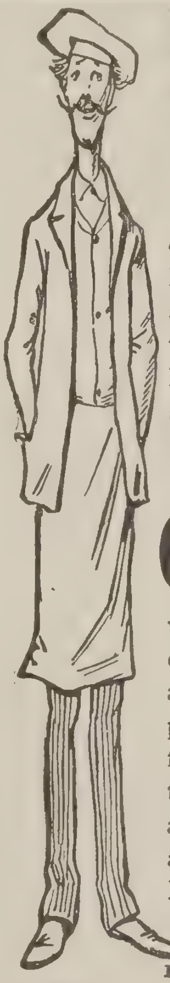
The old Maine fellow who posts his letters in the fire-alarm box has a right to laugh at the smart Boston girl who comes down here and digs spruce gum out of a white-birch tree.

Clara.—"Yes, I have enjoyed the company of the Fandorths very much. They are delightful people, but I should not care to meet them in town."

Flossie.—"You think you might not care so much for them after finding out who they are?"

Clara.—"I was thinking they might find out who we are."

The agricultural fairs are already some punkins



Needs
Shortening
So do all cooks; and the puzzle for every one of them has been how to avoid sodden pastry. The problem has now been solved by the
NEW VEGETABLE SHORTENING
Cottolene
which makes light, crisp, wholesome and easily digested pastry. The most famous cooks in the country say so, and you will also after a fair trial. Make it now.
Sold in 3 and 5 lb. pails by all grocers.
Be sure you get the genuine.
Made only by
The N. K. Fairbank Company,
CHICAGO,
St. Louis, New York, Boston, Philadelphia, Montreal, San Francisco, &c.

He was the son of a worthy Manchester citizen and had just returned from college. His father was a brusque, matter-of-fact man, who had no liking for anything pronounced, and he noticed with sorrow that his son returned with the latest thing in collars and various other insignia of a dukedom. The old gentleman surveyed him critically when he appeared in his office and then blurted out, "Young man, you look like an idiot."

Just at that moment, and before the young man had time to make a fitting reply, a friend walked in.

"Why, hello, Billy, have you returned?" he asked. "Dear me, how much you resemble your father!"

"So he has been telling me," replied Billy.

And from that day to this the old gentleman has had no fault to find with his son.

◆

Littlewit. "I am going to send a proposal to Miss De Gush. What kind of a paper shall I write it on?"

Greathead. "Foolscap, by all means."

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Bright, young and middle-aged men wanted in every locality to act as **PRIVATE DETECTIVES** under instructions. Previous experience not required or necessary. Send stamp for full particulars and get sample copy of the best illustrated criminal paper published. NATIONAL DETECTIVE BUREAU, INDIANAPOLIS, IND.

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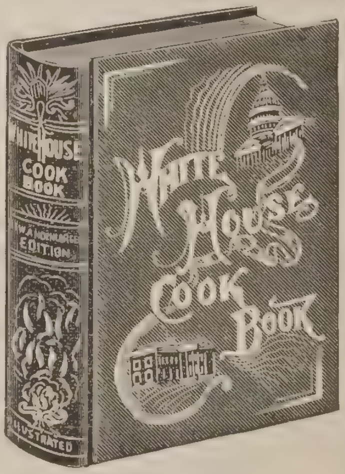

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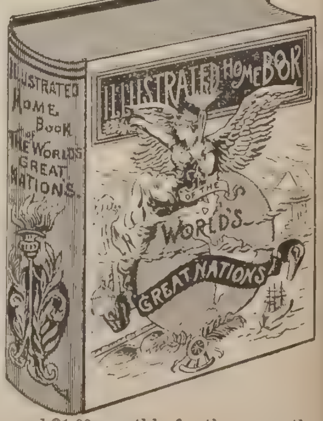

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HOUSEHOLD.

TESTED RECEIPTS.

Every receipt here given is original, has been practically tested by the AMERICAN ANALYST and is therefore confidently recommended.

ROASTED POTATOES WITH BEEF.

Pare the potatoes and place in the pan on the rack with the meat, basting when you do the beef. They will be nicely browned and mealy when the meat is done.

TURNIPS A LA CREME.

Cut peeled turnips into half inch dice, boil in salted water and drain, pour over a cream sauce made of one cup of hot milk poured gradually over one tablespoonful each butter and flour rubbed together. Salt and pepper.

SCALLOPED APPLES.

Butter a pudding dish and put a layer of peeled sliced apples in the bottom. Sprinkle with sugar, a very little flour and cinnamon, and some small bits of butter. Fill the dish in this manner, and bake one hour, covering the dish to prevent burning on the top. Serve either hot or cold.

PARSNIP BALLS.

Boil in salted water until very tender. Mash and season with butter, pepper, and salt; add a little flour and two well beaten eggs. Form into small balls and fry in hot lard.

TRUFFLED CHICKEN.

Simmer a nice chicken in enough water to nearly cover until tender, and let cool in the liquor. Remove the skin, also the white meat, and cut the latter in dice. Put one tablespoonful butter in a sauce pan, stir in an equal amount of flour, when smooth add half a pint of milk and stir continually until it boils, seasoning with half a teaspoonful salt and white pepper. When smooth, add the chicken, the yelks of two eggs, a cupful of finely chopped mushrooms and four truffles cut into tiny pieces. Cook one minute and serve in small cups.

SMOTHERED HEART WITH LEMON SAUCE.

Cook slices of beef's heart in a little water until tender, then dip in flour and fry in buttermilk until brown. Put some butter in a saucepan, add a little flour, when smooth add boiling water, flavor with lemon.

LIVER CROQUETTES.

Boil half a pound of calf's liver till nearly done, mince it very fine. Season highly with pepper, salt, chopped parsley, a little onion and sage or sweet herbs. Mix well with a beaten egg; shape into croquettes, dip in egg and bread crumbs and fry in boiling lard.

RISSOLES.

Mince finely the remains of cold veal or any meat from which all skin, bone and gristle have been removed; season to taste with pepper, salt, spices, grated lemon peel, moisten with beaten egg or cold stock and form into little balls; roll out very thin some good pastry, cut into round pieces large enough to enclose the balls; pinch the edges firmly over the meat, brush with beaten egg and fry in boiling fat. When a fine brown, drain, and serve dry and crisp on a napkin.

SCOTCH BROTH.

Two pounds of the scraggy part of a neck of mutton. Cut the meat from the bones and take off all the fat. Then cut meat into small pieces and put into soup pot with one large slice of onion, one of turnip, two of carrot and a stalk of celery cut very fine, half cup barley, and three pints cold water. Simmer two hours and strain. Cook one tablespoonful flour and one of butter together until perfectly smooth. Stir into the soup and add a teaspoonful of chopped parsley. Season with salt and pepper.

CARAMEL FOR COLORING SOUPS, ETC.

Melt one cup sugar with one tablespoonful water in a frying pan. Stir until it becomes a dark brown color. Add one cup boiling water, simmer two minutes, when cool, bottle.

◆

Governor Peck of Wisconsin, who has been renominated, is one of the Democrats' bad boys.

Figg. "How well you are looking!"

Fogg. "Yes, I've been drinking well water all summer."

ADULTERATION.

HOW HERRING BECOME SARDINES.

BY GUSTAV KOBBE.

If the herring were consulted in the matter, he would doubtless prefer to remain a herring. But, unfortunately for him, his view of the case is not taken into consideration. That portion of the human race which dwells upon the shores of the Bay of Fundy and its adjacent waters has found it profitable to convert the herring into a sardine, and he is therefore converted. He cannot protest, because by the time he discovers what is being done to him he is too exhausted to lift up his voice against his conversion. Hence it is that some nine hundred million herring are annually converted into sardines, without having any voice in the matter at all.

The herring is doubtless a perfectly moral fish, but he is stupid. Therefore, perhaps his fate is not such a regretable matter, after all. The percentage of stupidity in the world is entirely too much in excess of the intelligence, and the reduction of this excess should be encouraged. Hence all those engaged in the conversion of herring into sardines—from the wholesale shipper down to the amusingly fierce looking youths who, with dirk-knives thrust into their belts or boots, hang around the street corners of Eastport waiting for a job as cutters—are deserving of approbation. They are aiding in the elimination of stupidity, unconsciously, no doubt, but nevertheless effectively.

The herring's mode of capture is predicated upon his stupidity. Imagine a prisoner remaining in a prison the door of which is left wide open and unguarded. This is exactly what the herring does. Herring are caught in weirs. A weir consists of water with a fence around it. The fence is the *sine qua non* of the weir, for without it there would be only so many fathoms of water—good, clear, cold, salt water, it is true, but with nothing to distinguish it from the rest of the flood of water that rushes in and out of the Bay of Fundy at a ten-knot rate with every tide. Not every stretch of water is worth fencing off, and to select a good "privilege" requires nice judgment. When you see a resident of Campobello, N. B., Canada, wondering thoughtfully along the shores of the Bay of Fundy, he is not pondering over the question of annexation, or speculating on the possible profits of smuggling alcoholic beverages into prohibition Eastport. He is closely scanning the coves and passages with a view of locating a good "privilege" to lease from his government at $5 per annum, with the right of renewal. If he can discover a cove where the herring "play in," or a passage through which they follow the tide, he proceeds to lease it, and then to raise the necessary capital—from $500 to $2.500, according to the depth of the water, which may vary from eight to twenty feet. Usually he is obliged to cross over into Eastport to accomplish this. For, while the herring play in along the English shore, the money plays in on the American side.

The lessees of the privilege proceed to fell birch and maple trees for the fence. If the bottom is soft, the trees can be driven in; if not, it becomes necessary to build them in piers on a floor which is then weighted with stone and sunk—a somewhat expensive proceeding. Below low water mark the weir is strengthened by a wattling of woven brush, for, as this part cannot easily be got at for repairs, it is necessary to make it so strong that it will not readily be broken. Above low-water mark the "fence" is divided into three tiers by horizontal "ribbons," between which the brush is set vertically. It is thus held lightly in place, and can be easily pulled out if, for instance, it becomes necessary to make an opening to allow free passage for ice, which might otherwise destroy the weir. This brush is carried up to high-water mark. The nicest judgment is required in deciding where to place the mouth of the weir. It must lie exactly in the course of the herring, or they will not enter it. A weir will sometimes work admirably for several years, when a sudden change in tides will give an equally sudden turn to the course of the fish.

The herring strike against the outside of the weir, follow it down into the mouth, and then circle around from side to side, the whole school of fish being deflected as if it were a rubber ball, and never by any chance escaping, although the door by which they entered is wide open.

"Many a time," said a weir fisherman to me, "I've sat and watched the herring, and wondered what fools they were."

At low water the fishermen row into the weir, and dip the herring with nets some four feet wide at the opening and ten feet deep. A line is attached to the bottom, and when the net is full, its mouth is raised to the gunwale and the contents dumped into the boat by pulling in the bottom line. In the deeper weirs a purse seine is used.

Herring are caught most plentifully from August to December, and on low tides between 5 and 9 a. m. They are measured at the weirs in baskets of which there are ten to the hogshead.

On some tides one weir will catch as many as a hundred hogsheads; but the supply fluctuates greatly. The price varies accordingly, ruling at times as low as $1, and having risen to $75 a hogshead. A price like that named involves a heavy loss on every can manufactured; but the manufacturer may have contracts to fulfill, and will be obliged to compete in bidding for the herring with others in a similar predicament. Hence the small supply will go off at large prices. Fortunately for the manufacturer, the herring is not intelligent enough to appreciate the advantage there would be in making himself scarce, and therefore the average price rules at from $10 to $15 a hogshead.

It is a feature of the sardine industry that, while the season lasts, the various employees make big money. If it continued through the year, they would soon grow rich. As it is, the industry has been the making of Eastport, or rather it is the only thing that keeps it alive; for, as nearly all the help is local, and the New Brunswick weir-owners do most of their trading in Eastport, it brings considerable money into circulation there. Of the amount which the manufacturers received for the 900,000 cases shipped last season, about $1.10 to a case went for local labor, which aggregates a pretty large sum for a sparsely settled district.

The first to profit after the weir-owners are the boatmen employed by the manufacturers to sail from weir to weir and buy herring. A boatman receives $1 for every hogshead he delivers at the factory wharf, and as his business will often amount to fifteen or twenty hogshead a day, he surely has nothing to complain of. He often has to do considerable dickering, and at times competition is so fierce that the fish are put up at auction at the weirs. This is regularly the case at the mouth of the Irish Channel, in the Quoddy river. Their are a number of fine weirs in this channel, but as sailing vessels cannot venture through at low tide, they gather at the mouth of the channel and wait for the fishermen to carry the catch down in small boats. Sometimes a hundred sail will be waiting, and only fifty hogshead come down the river, and then there will be lively competition.

At the wharfs they are delivered to the youthful desperadoes above referred to, who are aided and abetted by women and girls, also armed with dirk-knives, but not so conspicuously. The cutters, standing at tables, proceed to decapitate the fish, and to "clean them out," so to speak; or, if the fish are too small to nicely fill the length of the can, the cutter tempers his ferocity sufficiently to omit cutting off the heads, and lengthens them by pinching.

The cutters throw the decapitated or pinched fish into boxes which are carried into the factory—a cutter receiving five cents for each box he fills, making at this rate about $2.50 a day. In the factory the herring are dumped into tubs of running water and thoroughly cleansed. Then follows the process called "striking with salt," the fish being dipped into tubs of brine until they are slightly pickeled, when they are taken out in dip-nets and laid out on "flakes"—wire screens. Part of the plant of a sardine factory are large ovens similar to those used in cracker bakeries. The fires are on the ground floor, and above them, on the second floor, where the flaking is done, are frames revolving like paddle-wheels. The flakes are placed upon these and allowed to remain in the ovens until the fish are cooked. The flakes are then carried to the packing-tables. Women and children do the packing. Piles of empty cans are on the tables, and also pails of cottonseed oil, each with a ladle measuring the exact quantity of oil needed in a can. The oil is first ladled into the can and then the fish are packed in. The larger herring are packed in mustard. The packers also put on the can heads, receiving fifteen cents per case of oils (one hundred cans), and twelve cents per case of mustard, of which there are fewer cans to a case. Packers earn from $15 to $18 a week. When a packer has disposed of all the herring on the flakes last placed upon her tables, she calls out "Fish!" very much as the saleswomen in stores call out "Cash!" From the packers the cans go to the sealers, who receive thirty-five cents per case sealed, but are fined a penny for each leak, the leaks being detected by experts employed for this special purpese. Each sealer has a mark by which the leaking can is debited to him, but in spite of lapses a sealer will usually earn about $5 a day.

The cans are now ready to be packed in cases and shipped. Finally, however, this question suggests itself: Is it the process above described, or the French names on the cans, which has converted the herring of the Bay of Fundy into sardines?

* * *

SULPHUR SOAP CONTAINING NO SULPHUR.

The prosecution held at the North London police court on October 13 that sulphur soap was a drug and pointed out to the magistrate that the definition of a drug was a medicine for outward or inward application, *vide* Section 2 paragraph 2 of the Sale of Food and Drugs Act, 1875. Mr. Ruegg laughed.—Mr. Lane, Q. C. (the magistrate): Why should not sulphur soap be a drug if it is used for skin disease?—Mr. Bridge said he purchased the soap on September 18, and the assistant said, "If there is no sulphur in it, Frazer's will have to answer for it." Cross-examined, Mr. Bridge said he was not put up to get it by a rival manufacturer. He expected to find sulphur in the soap, in fact he had found sulphur in soap, but, according to the analyst, not in this. If he asked for honey soap, he should expect to find it, because honey was a stimulant to the skin.—Mr. Ruegg said that with each tablet of soap Frazer issued a notice, which said that the soap was not sold as a curative soap, but it was recommended for persons who suffered from skin disease.—Mr. Bridge said that a notice to that effect was certainly not given with the soap he bought, but only contained a notice crying the virtues of the sulphur tablets made by the firm. The box had the following legend, "Frazer's Sulphur Soap," in gilt letters. Mr. Lane said the prosecution had failed to prove that sulphur soap was a drug, he therefore dismissed the summons. Mr. Lane refused to allow Mr. Bridge to be questioned as to the quality therapeutically considered of this so-called sulphur soap.

A recipe is certainly known, and is due to Sir H. Roe an eminent physician, who employs about 50 per cent of sulphur and 50 per cent of soap. Sulphur, therapeutically considered, is one of the very best samples in the whole range of materia medica, it is one of the very best laxatives; in small doses it is absorbed into the blood and acts as a stimulant to the skin and different mucous membranes, partly passing off from the skin as sulphuretted hydrogen, and partly from the skin in an oxidized state. Externally it is a stimulant and has the power of destroying all the vegetable parasites that infest the skin. Sulphur is also given as a stimulant in chronic cutaneous diseases. Sulphur was made in the years 1812-13 by Helmerick, a physician, in a kind of soap as follows:

Sulphur	2 parts.
Carbonate of potash	1 "
Lard	8 "

Said to cure the itch in eighteen hours. Hardy, another physician, uses half soap and half water. Dr. Behrund in the Berlin hospital uses the following:

Sulphur	8 parts.
Liquid tar	8 "
Soft soap	16 "
Lanolin	16 "
Powdered pumice	5 "

This, again, may be likened to soap, and when one considers the amount of rubbish palmed off to the public, we can only say that the time is very opportune for a drastic remedy to be applied to manufactures of this kind where deliberate fraud and adulteration is systematically carried on. Of three samples of soap analysed,

One had clouds of sulphur.
" two-tenths per cent.
" none.

So that if an average of this kind were to obtain with all samples taken, a vast amount of swindling has in the past been perpetrated. In the face of these facts Mr. Lane's decision is to be regretted, and sufferers from skin disease who have wasted their money on alleged sulphur soap trash have been egregiously hocussed.

DEATH THROUGH EATING ROTTEN FRUIT.

At the Chelsea Town Hall on October 8th, Mr. C. Luxmore Drew resumed and concluded his inquiry into the circumstances connected with the death of George William Haslehurst, aged thirteen years, the son of a lodging house manager, of 19 Little College street, Chelsea, whose death, it was alleged, was due to an irritant poison. A fellow school boy said that on the day previous to his death the diseased was given a "rotten" pear, which he ate. The witness also had one, and they afterwards had some ice cream from a barrow in the street. The witness was also sick. Dr. Frederick Wormack, analyst at St. Bartholomew's Hospital and for the county of Middlesex, said that by the direction of the coroner he had made an analysis of the contents of the stomach and intestines. He found no signs of actual poison. In the witness's opinion, the deceased had eaten some irritant food, which caused great bleeding in the stomach. Probably it would be the pears, because the ice cream would tend to contract and stop the bleeding rather than increase it. Death was due to syncope and fainting, following hæmatemesis or hemorrhage of the stomach, arising from eating the rotten fruit. The coroner said the case turned out not to be so serious as was at first supposed, the analysis showing no poison in the stomach. The jury returned a verdict in accordance with the medical evidence.

TINNED FOOD POISONING AT LEEDS.

In his report on analyses made for the city of Leeds during the quarter ending September 30th, 1894, Mr. Thomas Fairley, borough analyst, states that: Samples of tinned pears were adulterated with tin and zinc, one containing $4\frac{1}{4}$ grains of zinc and $\frac{1}{2}$ grain of tin per pound, whilst the other contained rather over $\frac{1}{2}$ grain each of tin and zinc per pound. The samples of tinned pears containing zinc caused violent sickness. The presence of zinc can only be due to carelessness in soldering or in selecting the tin plate used. The organic acids in tinned fruit have a powerful action on zinc or on very impure tin. The other samples were reported as genuine.

CASTOR OIL.

A statement comes from Boston that a scientist has just discovered a process whereby castor oil may be extracted from the bean in such a way as to eliminate all those properties which have heretofore made it such an offensive dose. It is claimed for this discovery that, unlike all other attempts to render castor oil palatable, by this new process the oil is not robbed of any of its valuable medicinal qualities, while all nauseating and griping properties are removed. In view of the position occupied by castor oil as a remedial agent for generations past, this discovery is one of great importance.

HOW THEY TREAT PATENT MEDICINE SWINDLERS IN GERMANY.

The manufacturer of a German nostrum termed "Professor Fragelli's Beard Promoter," has recently been told that he must pay a fine of £100 or go to gaol. In the leading German comic paper he advertised that his nostrum was an infallible article for producing a beard. Some youths tried it, did not succeed, and brought suit against the swindler, with the result related. The preparation was shown to consist of a methylated spirit solution containing benzoin, oil of lavender, cinnamon and sandalwood.

SELLING CASSIA FOR CINNAMON.

At Dumfries, David M'Nay, chemist, Thornhill, and John Cuthbertson Pendreigh, chemist, Thornhill, were charged with selling an ounce of ground cassia to Inspector M'Kirdy when asked for an ounce of ground cinnamon. A plea of guilty was tendered in each case, and Mr. Thompson argued that everybody knew when they got the cheaper article that it was cassia—in fact, it was Chinese cinnamon, while the other was Ceylon cinnamon. Sheriff Campion said people were entitled to get the article they asked for, no matter what the price charged might be. He fined each of the defendants £1, with 21s. 6d. of expenses.

HYGIENIC.

A NEW DISINFECTANT.

The technical journal issued by the Bavarian Polytechnic Society contains in its last number an interesting report relating to "formalin," a new composition for disinfecting and preserving purposes. According to this journal, which is reputed to be the best of its kind in the kingdom of Bavaria, formalin is a 40 per cent solution of the gas-like composition called "form-aldehyde" (C H O H), and is produced by oxidation of wood spirit (methyl alcohol). It has demonstrated itself to be a perfectly harmless means for disinfecting purposes; for preventing and destroying bacilli and removing obnoxious odors, such as those arising from sulphuric acid combinations, through chemical reaction, without in turn creating any odor whatever. On account of its poisonous properties it cannot be taken internally, either in concentrated or weak solutions. For most purposes one tablespoonful of formalin to one quart of water is sufficient. An extra advantage is the fluidity of this new chemical composition, in consequence of which its penetrable properties are greatly increased. Its fumes are hurtful only when inhaled in considerable quantities. Formalin saturates animal tissues very rapidly and prevents their decay. When sprayed it is very serviceable for disinfecting and purifying the atmosphere.

Formalin is admirably adapted for disinfecting objects of every description, such, for instance, as hotels and schoolrooms, stables, slaughterhouses, cars for transporting meat, cabins and holds of ships, kitchens, cupboards, etc., for which purpose the formalin solution is placed in any suitable apparatus and sprayed under pressure. To remove the odor of this chemical, which is not at all disagreeable, a short exposure to the air is sufficient. In this manner walls and curtains, sofas, beds, etc., can be disinfected without the slightest risk of injury to material or color.

It will thus be seen that formalin is particularly valuable for the use of health officers at ports and elsewhere. A solution of formalin is also exceedingly well adapted for use in soaking infected linen and clothing, and in rinsing vessels used in sick rooms.

Formalin powder and formalith sheets are employed for disinfecting furniture, reservoirs, etc. These forms of formalin are produced by saturating chalk paste with 50 per cent of the chemical.

Floors and other large surfaces are disinfected by strewing with impalpable formalin powder or washing with a solution of it. Small articles are placed in chests with the above-mentioned formalith sheets. Rags, when strewn with formalith powder, can be kept closely packed together. This same powder, or the solution, serves admirably also for disinfecting and deodorizing the bilge water of ships and steamboats.

The solution can be given any perfume preferred, and, when sprayed in sick rooms, removes at once the odor peculiar to the latter. In all cases enough formalin should be used to render its characteristic odor plainly perceptible.

Meat, game, fowls, fish, etc., if dipped into a solution of formalin, remain fresh for a long period without getting a disagreeable taste or the odor of decay. Meat which has already begun the process of disintegration, and is only in the first stages of decay, can be rendered odorless by simply dipping it into the solution for one or two minutes and washing with the same. The cause of the disagreeable odor is removed.

Regarding the use of formalin in the preparation of butter and cheese, sufficient data, the journal says, have not as yet been secured; but it has been shown to be very well adapted for cleaning the vessels and machinery employed in dairies.

Formalin is of special importance for slaughterhouses and meat shops, for preserving fish (during transportation) and fruit, the latter being dipped or placed for a short time in a weak solution of the chemical.

While the discovery of formalin proper dates back a few years, its valuable properties, as a composition for disinfecting and preserving purposes, have only recently been made known.

Louis Stern,
Hamburg, June 9, 1894. Commercial Agent.

HAMBURG DISINFECTING ESTABLISHMENT.

The new disinfecting establishment, the building of which was commenced last year, is now finished. It is situated on the Bullerdeich, with one side on the canal, called the "High-water Basin," so that it is accessible as well from the land as from the water. Goods from ships intended for disinfection, or articles subject to quarantine which are to be disinfected, can therefore be brought to the establishment without touching the city.

The establishment consists of a main building, two sheds built of stone, and a house for the three highest officials. The whole concern is divided into a "clean" and an "unclean" side. The entrance on the Bullerdeich is through an iron gate on a large yard, one side of which is formed by the main building. Between the east side of this building, which forms the greater part of the establishment, and one of the two sheds, there is a wall, and in the latter an iron gate which closes off the unclean side. In the high cellar of the main building, filled with pipe heating and ventilating apparatus, is the entrance for women, through which one passes into an undressing room. Close to this room is a small lift by which the clothes are raised to the cleaning room for disinfection. Next to the undressing room there is a bathroom with two douches and two zinc tubs, from which a second door leads to the dressing room where the clothes that have been disinfected and dried during the bath are delivered by the lift. The dressing, undressing and bathrooms for men are arranged in the same practical manner, with the exception only that the bathroom contains ten douches and no bath tubs. Entirely separate from this department, and accessible only from the clean side, is a large waiting room in the underground story, fitted up for 50 to 60 employees; also a large storeroom containing an outfit for several hundred persons to be employed for the different disinfections in private houses.

The outfit of a squad of three men consists, for each, of a long linen coat and a Levant sponge to be tied before mouth and nose to prevent the inhaling of infectious matter. Each squad is also supplied with an iron ladder, which can be lengthened at will, and with boards to prevent the damaging of wall paper and the floor; also a lot of pails, fitting one into the other. A tin box contains sixty-three different articles, among which are brushes of different kinds, as they are necessary for a thorough cleaning of rooms; towels and dusters, a hammer, nails, and glue, the latter to be used for making small repairs; polishing powder and Vienna clay for polishing brass articles, a scraper for cleaning the crevices of the floor, knives, etc.

The disinfecting is done with diluted carbolic acid, and that of furs with bicloride of mercury.

Those apartments which are not papered or painted with oil paint are, after the disinfection, painted with paint mixed with glue by the men of the squad, to avoid causing the respective occupants any expense, and it is made the men's duty to treat the furniture, bedding, clothes, etc., with the utmost care.

Suitable men belonging to the street-cleaning department are being made acquainted with the disinfection under supervision of the chief inspector of the establishment for disinfection at the "Holstenthor," and it is intended to have one hundred street-cleaners so well trained that they can be intrusted with the command of the disinfecting squads of three men. People who are employed in this service are provided with gray uniforms, over which long linen coats are worn during work, which are also to be donned by visitors or officers of the establishment who enter the unclean side.

Next to the storeroom is a large tailor's workshop, as repairs are to be made at once in the establishment.

On the ground floor, which is completely separated from the cellar, the division into a "clean" and "unclean" side is just as strictly carried out.

The disinfecting room proper contains one small and four large disinfecting apparatuses. The iron receptacles, which are similar to large casks or drums, are placed in the middle of the unclean room and are filled with the articles requiring disinfection. The disinfection is done in such a way that air heated to 60° Celsius is introduced into the apparatus first, and after the articles have been exposed to this heat for some time, steam heated to 108° Celsius is introduced, which temperature is kept up for about fifteen minutes or longer, according to how rapidly or slowly the article is permeated with the heat. By this process, every living thing and every germ is killed. After the disinfectant has been thus finished, the steam is shut off and the articles are dried again by heated dry air.

On the side of the apparatus opposite the door through which the articles are brought in, there is another door where the articles are taken out, and which opens into the clean department. From there the articles are either immediately sent to the dressing rooms by means of the lifts, or made ready for delivery.

In the main part of the building there is also a large bathroom, with several douches, for the employees of the establishment, affording them the opportunity of complying with the requirement to take a bath before leaving the place.

Separated from the engine room by a wall, there is a place for drying the washing of the establishment. Two large boilers supply steam of three atmospheres pressure for disinfectant as well as for heating all the rooms in the main building. Next to the engine room there is a place for coal and a repair shop.

In the shed, on the unclean side, there is a stable for ten horses and a storeroom for their feed. Next the stable, there is a coach house for the wagons intended to fetch the unclean articles, and a wash room which is open on that side which faces the yard. In this yard, on the canal, is a hand crane for lifting heavy articles, and also a large cistern into which all the dirty water of the establishment is conducted and then disinfected with lime. On the clean side of the yard is another shed, which serves as a coach house for the wagons which take the disinfected articles away.

The wagons are built entirely of iron, have a large door at the back, and two smaller doors on the right side, of which the one leads to the loading space and the other to the space set aside for the attendants. The color of the wagons is dark green, with a gray stripe, the lighter or darker shade designating the wagon as a "clean" or "unclean" one. In a separate room of this shed are two movable disinfectant apparatuses, which can be used outside of the establishment if necessary. The steam required is in this case generated in an upright boiler.

The establishment now has twelve wagons for articles, two carriages with glass windows for people, and a large number of hand cars.

On the clean side, on the canal, is a place for the launch which belongs to the establishment.

The establishment is in direct communication with all police stations, and is also provided with a telephone, which places it within easy reach of the public.

The fourth building, as already mentioned, contains apartments for the inspector and other higher officials.

W. H. ROBERTSON,
Hamburg, June 9, 1894. Consul.

VENTILATORS.

Before going further, it may be as well to mention that gas has the property of diffusing itself with great rapidity, a quality easily tested by bringing a scented flower into a room, when immediately the odor penetrates everywhere. This property acts both for good and ill; a noxious gas poisons, and a beneficial one purifies the air: both obey the law of fluids,—when warm they rise, when cold they fall. Let us suppose it is a cold damp day, the raw air clings to us closer than a garment. We feel weary and heavy and generally very miserable. The fire, too, shares our depression, it requires constant coaxing to persuade it to burn, and even then we cannot get a cheery blaze. At last a temporary neglect reduces it to a few cinders of dull red at the bottom of the grate. What is to be done? A vigorous poke will put it out at once. So we gently pile the dying embers together and lightly cover with choice morsels of fuel, and taking a newspaper we effectually block the chimney, only leaving a small space beneath the bars to admit the air. Presently comes a welcome rushing sound and the paper must be firmly held, to prevent it being sucked up the chimney by the draught. Soon there is quite a bright fire, but when we take the paper away the flame flickers away and leaves it burning as usual. Why did the paper make so much difference? One might suppose that more air would reach the fire without it. The reason is that when the fire has exhausted the air in the chimney, an equal volume rushes in to take its place, but as it must go through the only place left for it under the bars, a much larger quantity passes through the fire, and as the fire burns in proportion to the amount of oxygen obtained, it follows that it burns better when all the air that goes up the chimney passes through it. There is yet another reason, the brighter fire consumes more air and accordingly there is a greater rush to replace that used. Every breathing thing is in a way a fire that burns up the food eaten in proportion to the supply of oxygen, so that without a fair share of this gas life flickers and dies, and no one ever enjoys good health without a bountiful supply.

Owing to the diffusibility of gas the whole air in a room becomes vitiated by the breath unless there be adequate inlet of oxygen, and ample outlet for carbonic acid gas. In providing therefore for this ingress and egress, we must think of the lesson taught us by the paper in front of the fire, and provide as large ventilators as possible. A narrow slit or chink makes a draught, a fact that can be proved by opening the window an inch at the bottom. The air admitted by this means blows in in a steady draught, but if the casement be thrown wide open, the air steals pleasantly and imperceptibly into the room. On this principle we shall never select those elegant star ventilators, cut at great cost into plate glass, with a disk of glass in which are cut corresponding stars identically the same and which by means of a button revolve so as to admit an infinitesimal quantity of air. They have another fault, there is nothing to direct the stream of air upwards and consequently there is nearly sure to be a draught shot into the room. A simple block of wood, costing only a few pence, is much better. The block is made the same length and breadth as the bottom bar in the window sash, but from three to six inches deep. When the sash is opened the block is fitted into the groove left vacant, and the window shut down upon it. This leaves a long narrow opening where the hasp joins the two sashes. What is more, the stream of air is diverted upwards where a draught can do no harm, and if necessary a woolen curtain intercepts damp fogs, etc. But this is barely enough for most people, especially in good weather, and the following is one that will be used by the writer as soon as it is too bleak to leave the window wide open at the top, day and night. A blind will be made about 18 inches deep of dark green baize or serge, exactly the size of the opening left when the upper sash is lowered, a broad hem at the bottom will be filled with an ordinary lathe, and the whole nailed into position, either inside or outside the window as may prove most convenient; this will admit the air, but as wool is a non-conductor of heat, the warmth of the room will be kept in, and the cold, damp and impurities of the outside air will stay where they are. The chimney will serve as the exit for impurities, and a fire will still further aid their departure. It is rather a good plan to make a fire screen by stretching some woollen material in front of the fire-place over a frame work of lathes. Where there are curtains it keeps them clean. It is necessary to wash these ventilators frequently, as a great amount of dirt and impurities will be intercepted by them, and the fresh smell clean curtains give shows how important a factor cleanliness is to good health. There is another ventilator recommended, which theoretically ought to be of good service. The cost is about 30 s. Some bricks are removed from the chimney near the ceiling, and into this aperture the ventilator is fixed. It resembles a venetian blind, only the lathes are made of talc and are so constructed that they act automatically; when the pressure of air is from within the room they open and permit its escape. When from without they remain closed. Thus it will be seen to be useful as an outlet, but what about the intake? Some good houses are ventilated now by means of an opening on the level of the floor, and the air thus admitted is carried by an upright pipe to about seven feet high. This is, of course, expensive, but a cheaper substitute ought to be equally as good. Buy an elbow-jointed pipe, a good big one, and get a mason to fix it in the wall, so that one opening is outside and the other upright in the room; this can be made any height by the addition of more pipe, and can be painted or decorated according to taste. The air can easily be filtered by putting a woollen covering over the top.

One architect proposed, as a good way of getting rid of bad air, was to make the ornamental cornice open-work opening into a groove, which would carry the air into a shaft or chimney. This seems a lot of trouble, but the days are upon us when the wider use of gas stoves and electricity compel us to give the question fuller consideration.

A very good way to ventilate is to have a small window fitted with laths, at such an angle as to admit air, but exclude sun and rain. This resembles a venetian blind, but of course the laths are fixed. It could easily be put into one frame of a w. c. window when the glass was accidentally broken, and would be cheaper and better than renewing the pane. Some have a shutter to put before it, but this is rarely necessary, as people are strongly recommended never to have a w. c. window shut.

The day is near when we shall warm and light our rooms by merely turning a switch, and it does not take a prophet to foresee a host of troubles respecting ventilation. The old houses will already have chimneys, but without the fire there will be no heat to draw the bad air away: in the new houses there will probably be no chimneys, and this valuable ventilating shaft may be replaced by some wholly inadequate slit, by courtesy termed a ventilator.

MEDICAL.

THE CIGARETTE HABIT.

By Frederick Wallace Abbott, M. D., Taunton, Mass.

A cigarette, according to *The Century Dictionary*, is "a small cigar made of finely cut tobacco rolled up in an envelope of tobacco, corn-husk, or thin paper, generally rice-paper, so as to form a cylinder open at both ends." While the first of the definition—"a small cigar"—is etymological, the remainder is more specific and comprehensive, showing wherein the cigarette differs from the cigar in its manufacture and constituent parts. No little ignorance concerning this phase of the subject obtains, even among smokers themselves, but a moment's investigation will dissipate it. The idea prevails that quids and cigar-stubs, culled by the gamins of large cities from gutters, sidewalks and cuspidors, and saturated with opium, form the greater part of the common cigarette. This, we think, is incorrect; for the cost of harvesting such delectable morsels, even at "cut rates" and "wholesale prices," would far exceed the present price of tobacco, while opium is too dear to enter largely into so cheap an article. Most cigarettes, we are reliably informed, are made from sun-dried tobacco of North Carolina rolled in a wrapper of thin paper, and a recent careful examination of several specimens failed to discover other ingredients.

Is, then, the smoking of cigarettes injurious? If so, is it more harmful than a cigar? The subject considered from its physical standpoint alone, we would answer the former question affirmatively; and the latter, not, of itself, more harmful, but as commonly used, far more so. We may note three elements of danger in the use of the cigarette: first, the tobacco itself; secondly, its manufacture; and finally, the manner of smoking. Tobacco, as commonly smoked, causes hyperemia of the mucous membrane of the mouth, fauces, esophagus, and stomach, which may be manifested by dryness of the mouth, and throat, a capricious appetite, nausea, gaseous eructations, pain after eating, and other symptoms of gastric indigestion. In our early practice, a severe gastralgia seemed wholly due to smoking, the symptoms quickly disappearing upon abstinence.

Although tobacco is physiologically laxative, ordinary smoking has practically little, if any, influence over intestinal action. Possibly smoking may have a slightly preservative effect upon the teeth, but it can hardly compensate for the resulting discoloration. "Smoker's cancer" (epithelioma of the lip), probably caused in part by long-continued mechanical irritation, is of frequent occurrence, destructive in its tendency, and difficult to cure. Constant irritation of the Schneiderian membrane produces a swollen and permanently thickened condition of the parts, nasal catarrh resulting. Some of the worst cases of chronic pharyngitis are thus caused and perpetuated. Though few apprehend its source, many smokers can testify to the difficulty they experience in breathing through the nose. Snoring, too, is greatly due to smoking, and the infrequency of this affection among women abundantly proves our statement. In its passage through the nares, the air is warmed, and thus prepared for the delicate lungs; but the effect of smoke and cold air, when alternately drawn through the mouth directly upon their tender tissues, is very injurious, often giving rise to diseases of the respiratory tract well-known to the medical profession.

The effects of tobacco upon the circulatory system are so generally understood that "smoker's heart" is familiar to all, some physicians being able to detect the habit by auscultation alone. Though, as often, no structural change exist, the organ is "irritable," irregular in its action, and functionates with difficulty. The headache, trembling, goneness, despondency, and "nervousness" experienced by old smokers during an enforced abstinence, partly show to what extent the nervous system is affected by the use of tobacco; and many neuroses may be traced to this source. Tobacco has long been noted for its anaphrodisiac properties, and no doubt the venereal appetite is lessened by the nervous depression consequent upon its excessive use. Tobacco-nausea is effective in chordee, priapism, satyriasis and nymphomania; and spermatorrhoea, if dependent upon continence and plethora, may be checked by this disgusting remedy. The prevalence of smoking, especially cigarettes, among the demi-monde and "gay Lotharios" would seem to negative this theory of its anaphrodisiac virtues, but it would be well, perhaps, to look further for our explanation of this seeming contradiction. Smokers are proverbially "dry" and, like most habits, theirs is far-reaching in its results. Contact of the smoke with the mouth and throat causes an intense thirst, and alcoholic stimulants may be and often are used to quench it. "Women and wine" have long and intimately been associated, and the sexual ardor of these classes proves, not the inefficiency of the "weed" but the supremacy of the "cup";

> "For 'tis as sure as cold engenders hail,
> A liquorish mouth must have a lecherous tail;
> Wine lets no lover unrewarded go,
> As all true gamesters by experience know."[1]

We would say in passing, that we have never seen a male drunkard who did not use tobacco. Has any reader been more favored in this respect? If so, please send us his address; we have a penchant for curiosities. The diuretic value of tobacco is admitted by most practitioners, but it will probably never supplant water in this field. Scotoma, advanced amaurosis, achromatopsia and other visual defects are often due to smoking, and all rational treatment must begin by removing the cause. Muscular weakness, lassitude, disinclination for physical exercise, and impaired cerebration, are also frequently seen in old smokers. The effects of the post-prandial cigar are much extolled by its devotees, but abstainers, rarely needing its sedative influence, can hardly give competent testimony upon this point.

In the manufacture of cigarettes, however, lies an element of danger far greater, in our opinion, than the use of tobacco itself. The employees of the large manufactories of New York, where most cigarettes are made, are mainly from the lowest and most depraved classes,—drabs from the slums and stews of the great metropolis; and these degraded women, filthy in the extreme, and often victims of loathsome diseases handle most of the cigarettes and cheap cigars made. Cigar-makers commonly fasten the wrapper by wetting the end of the cigar with saliva,—a process we have often witnessed. Few physicians, informed as they are upon these matters, care to make common use of a towel, comb, or razor; and no one, it would seem were a moment's thought given the subject, would dare lip anything from such hands. So well understood is this danger, that as we are informed by a dealer of prominence, legislation along this line was recently sought in New York, the design of the proposed law being the compulsory medical examination of all engaged in the manufacture of cigarettes. It failed, however, of enactment, and the risk of contagion daily increases. Nearly as injurious, also, is the manner of smoking cigarettes; for, not content with taking long whiffs and puffing the smoke from the mouth, as is the custom of cigar smokers, the cigarette victim deeply inhales the poisonous smoke, causes it to penetrate all parts of the lungs, retains it as long as able, and then slowly expels it through the nose and mouth. The noxious matter being thus brought into the air-cells, absorption takes place through the blood, and systematic poisoning is added to the local irritating effects of smoking. The lethal effects of nicotine are not unknown to the profession. "Smokers claim", to quote the late Professor Howe, "that the fumes of a cigar will destroy all noxious microbes; and if the tobacco be strong, I believe in its killing qualities. Only a disgusting worm and man chew tobacco. The nicotine of the 'weed' will destroy all vermin, and puts to death all the larger animals."[2] The effect of this practice upon the respiratory tract may be seen in the rapidly increasing number of throat and lung affections of to-day, and the medical profession is becoming more and more impressed with the importance of this habit as a causative factor in its diseases.

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[1] Alexander Pope, Poetical Works, The "Wife of Bath."

[2] Andrew Jackson Howe, A. M., M. D. "The relation of the physician to the public", The Electrical Medical Journal, vol. xlix, p. 597, 1889.

The evils mentioned are direct, yet others, not so immediate, but far-reaching and important, nevertheless, also exist. The tobacconist, like many other thrifty tradesmen, has an eye to the main chance, and his desire for gain often renders him indifferent to the manner of obtainment. To increase the already extensive demand for his goods, he generously gives the purchaser of so many cigarettes so many photos, which are but representations of primal Eden without its compensatory innocence; and it is impossible to estimate the pernicious influence of such gifts upon the curious, restless, untrained minds of the boys and girls into whose hands they chance to fall. Yes, "girls"; for, as most physicians can testify, the cigarette habit is not confined to the sterner sex. When displayed in all its synmetry and loveliness by the matchless skill of a Correggio or a Titian, a study of the human form must lead the mind to reverence the Creator of a handiwork so marvelous; but these fetching presents—flashy photos of variety actresses of questionable character in abbreviated skirts—can further no purpose but that really intended, to pander to the morbid curiosity and salacious desires of ignorance and vice. Well might the clergy and press unite with us in decrying an evil so flagrant, and prove themselves true educators; but, too often, alas! policy sways the sacred desk, and the voice of the latter is dumb.[1] Modesty graces the brow of youth and enhances the dignity of age; but the acme of absurdity is reached when the family physician and spiritual adviser act the prude. Legislators are giving this matter some little attention, and restrictive measures are frequently presented; but, as in Massachusetts this year, most of these acts are emasculated before their final passage. It would be well, perhaps, to first cast the beam out of our own eye; for some of the medical profession are not above criticism on this subject. "In fact", says an eminent therapeutist, "tobacco must perform some important part in physiological life, or in the struggle for existence, or it would not be so widely used by men who are distinguished by the soundness of their judgment and their success in solving the problems of social existence in every other detail."[2] Tobacco is "widely used", we readily admit, by men of sound judgment and good morals; but this does not prove that "it must perform some important part in physiological life, or in the struggle for existence".

The tobacco habit is formed in youth, when reason is undeveloped and judgment weak, as the learned writer well knows; and, according to their own statements, the possession of this slavish habit is almost universally regretted by "men who are distinguished by the soundness of their judgment and their success in solving the problems of social existence in every other detail." These same men prove "the soundness of their judgment" by discountenancing the use of tobacco in their own families; and we seriously question if the talented author[3] of *Heredity*[4] *Health and Personal Beauty*[1] would recommend to his female readers even a "moderate indulgence in the post-prandial cigar",[2] notwithstanding "it allays restlessness and muscular irritation, and creates a lassitude which is favorable to the pleasant flow of fancy, so happily illustrated in the 'Reveries of a Bachelor' of Donald G. Mitchell."

The expense and filthiness of tobacco, whatever its use, need little consideration; they are too well known to its unfortunate victims—and a long-suffering public. Much more, indeed, than the patience of our readers would endure could be written upon this subject, but we forbear. The experience of the profession, and the good sense of the public, will, we are sure, sustain us in our opinion of the cigarette habit, including its accessory evils; it subserves avarice, deludes ignorance, preys upon weakness, panders to vice, depletes the purse, enfeebles the mind, and destroys the body; and is a sin towards God, an outrage upon nature, and a curse to mankind.

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[1] There is hope along these lines, however, for some of our leading secular publications—notably, the Taunton Daily Gazette, July 25, 1892—have recently contained leading editorials against this pernicious habit, and Rev. Edward F. Clark, Pastor of Grace M. E. Church, Taunton, Mass., in a most excellent sermonic lecture upon "Nicotine and Nicotianin", June 4, 1893, scientifically discussed the question in extenso, and vividly portrayed its evils.

[2] John V. Shoemaker, A. M., M. D., Materia Medica, Pharmacology, and Therapeutics, vol. ii, p. 937.

[3] John V. Shoemaker, A. M., M. D.

[1] An excellent work without which the library of any physician is incomplete.

[2] John V. Shoemaker, A. M., M. D., Materia Medica, Pharmacology, and Therapeutics, vol. ii, p. 937.

THIRST.

Thirst is a sensation we have been passing through during the last few weeks, and it is a subject worth considering. Its causes are numerous; but during the hot summer days the chief cause is the heat. Thirst is the cry of nature for liquids, just as hunger is a call for food. When we perspire freely the body gives off a large quantity of water; as this is taken from the blood it must be made good again, otherwise the blood would become too concentrated. Nature gives notice of this by creating the feeling of thirst, so that we are compelled to take fluids. But it is not only during hot weather that we perspire, for there is always a certain amount of perspiration going on—a kind of evaporation; this is usually supplied by the liquids we take at meals, and does not require any extra amount as in hot weather when the skin acts freely. Of course, there are other causes besides heat which cause thirst, and they cause it in à different way. When a person is feverish, thirst is one of the first signs; this is very similar in its action to that of hot weather—the heat of the one being internal, that of the other external. In both thirst is the result. These are what are called *general* causes, but there are *local* causes which operate equally in summer and winter, and are unattended with fever. We refer to indigestion, congestion of the stomach, and the too abundant use of spices and stimulating foods and drinks. Local irritation is the result, the lining of the stomach becomes red and congested, and mucus is thrown out on its walls, and the stomach is impeded in its physiological action. In such cases the presence of some bland fluid, such as water, acts as a soothing agent, and washes away or dilutes the tenacio mucus that is interfering with gastric digestion. This condition of the stomach is called *catarrh*, and the greater the catarrh the greater the thirst will be. Thirst is sometimes the only symptom of dyspepsia—at least, the only symptom that attracts notice. Thirst, then, if it occurs between meals (unless in hot weather, or where, as in excessive exercise, a similar state of the body is brought about), is an abnormal thing, and if it continues some error of diet is being committed, or some form of indigestion is being suffered from. Thirst is not a normal sensation like hunger. In health hunger always comes first, but when thirst does come it is worse to bear than hunger and will kill sooner. One may live a long time without food if only a little be taken, but a dry meal without water would soon make it impossible to eat.

The question is sometimes asked: How much fluid should be taken at meals, or during the twenty-four hours? It is impossible to lay down a rule that will apply to everybody. This much may be said, that a wide range as to quantity is consistent with perfect health. Nature is usually the best guide, and the wants of nature should be attended to. If the drink is an innocuous one, it will take a very large quantity to do harm. At the same time thirst may be, as we have said, the sign of indigestion, in which case it should be treated as one would any other symptom of indigestion. Habit also has a great deal to do with the amount of liquids taken during the day. The average healthy man or woman does not feel thirsty between the three or four ordinary meals of the day. If they do, they can generally find a cause for it—the hot weather, or because an extra amount of salt had been taken at a previous meal. Some condemn salt altogether because it causes thirst; but salt is one of the most important elements of the blood and tissues, and it is just as unphysiological to leave off salt altogether as to leave off taking fluids altogether. The amount of salt usually taken by healthy individuals does not create thirst. And we think those who have schooled themselves to take no liquid of any kind, or almost none, are more likely to do themselves harm than if they took a fair quantity of fluid.

Water is the drink that nature intended man to take, and water has this advantage that it does not create thirst, and there is not much likelihood of its doing harm if it is pure. Those who are in the habit of taking stimulants with meals drink more during the day than water drinkers. Few people drink at dinner a couple of tumblers of plain water, but most people who drink beer or claret and water can take two tumblers or more. Even if the water be medicated, as soda water or lemonade, more of it can be drunk than if plain.

The best drink for thirst is water, toast and water, oatmeal and water, barley water, or cold tea. Anything sweet increases the thirst. Acid drinks are refreshing, and lemon juice is the best. A lemon cut into slices, with some boiling water poured on, then allowed to cool, makes a very safe and wholesome drink. Too much sugar should not be added, as sugar causes thirst. Care should be taken in the selection of an advertised lime or lemon juice, as some of these are made or adulturated with vitriol, and form a very injurious drink.

EYES AND EYE DOCTORS.

In no branch of surgical science has more progress been made of late years than in that which concerns itself with the eye. Within the memory of men now living persons with defective visions were divided into myops or short-sighted people, and hypermetrops or long-sighted people, and for the former concave spectacles were devised which threw the focus of vision back, while for the latter convex spectacles brought the focus in front of the retina. It was assumed that the only differences in these two forms of visual disturbance were differences of degree, and when the half-blind person could by a violent effort read through the spectacles which the optician tendered him he was supposed to have got all the relief which science could furnish him. Science has now done for the eye what specialists are trying to do for the nerves. It has diagnosed a variety of ailments which were unknown to our fathers, and for these it is busily engaged in devising remedies. The human eye, when studded under the microscope and in accordance with the law of optics, is found to be one of the most imperfect organs in the body. There are few perfect eyes in the world. The refracting surfaces are constantly curved so as to blur the image and to produce what doctors call a stigmatism. There are frequently opacities in the transparent media, which cast a shadow on the retina and distort the vision. Sometimes the retina acts like a lens and disperses the various pencils which constitute white light. These and other defects can be detected by the modern oculist, and treated by the knife or counteracted by suitable glasses. But it is plain that this is work for which the skill of the oculist is required and which cannot be intrusted to an optician, however well trained he may be. A learned German named Helmholtz some years ago invented an instrument called the ophthalmoscope. With this instrument the structure of the eye can be determined at leisure and its departures from the normal detected. The oculist then goes to work and devises a pair of glasses with just the curves required to correct the defects of the eye; these glasses, described in mathematic symbols, are handed to the patient as a prescription to be filled by a competent optician. There are in European and Eastern cities opticians who do nothing but fill such prescriptions. They work over glasses as Alvan Clark works over telescope lenses; the curves must be mathematically true or the glasses will not fulfill their purpose. But when the mechanic knows his business, and the work is done according to the prescription, the defects of the eye are cured.—*San Francisco Call.*

INVENTIONS, SCIENCE, ETC.

ARTIFICIAL PERFUMES.

Almost all the natural perfumes are of vegetable origin, and are derived from the treatment of flowers and fruits. In this way are obtained the aromatic essential oils of rose, mint, anise, santal, thyme, cloves, etc., and the perfumes of the violet, iris and jasmin. Musk is the only important perfume that is of animal origin.

For a long time the odor of fruits has been imitated with the aldehydes and ethers of fatty acids, such as the acetates, valerianates, benzoates, salicylates, and butyrates of methyl, ethyl and amyl, which, mixed in different proportions, recall the odor of strawberries, raspberries, apples, pears, etc. The following are two examples of such mixtures:

PERFUME OF THE PINEAPPLE.

Chloroform	10 grammes.
Aldehyde	10 "
Butyrate of ethyl	50 "
Butyrate of amyl	100 "
Glycerine	30 "
Alcohol, 100°	1 liter.

PERFUME OF THE APPLE.

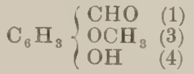
Chloroform	10 grammes.
Nitric ether	10 "
Aldehyde	20 "
Acetate of ethyl	10 "
Valerianate of amyl	100 "
Glycerine	40 "
Alcohol, 100°	1 liter.

The aroma of rum and cognac and the bouquet of wines have also been reproduced artificially. We shall not dwell upon the danger that accompanies the use of these products in a large quantity when they are mixed with beverages and alimentary substances. We shall occupy ourselves here more particularly either with products like those that we find in nature, such as vanilline, or with perfumes such as musk and the odor of violet, which are designed not for alimentation, but for perfumery properly so called.

Among the aromatic products employed as perfumes we may first mention methylsalicylic ether, which reproduces the oil of wintergreen (*Gaultheria procumbens*). The oil of bitter almonds, too, has been frequently replaced by nitrobenzine, which is prepared in large quantities by manufactories of coloring materials Nitrobenzine, as regards composition, is absolutely different from the oil of bitter almonds, but it resembles it in odor. Benzaldehyde, likewise, has replaced the oil of bitter almonds in certain cases.

Such substances possess but a secondary importance; but vanilline, on the contrary, which reproduces the odoriferous principal of the vanilla bean, is the object of an extensive and very prosperous manufacture. The first process that gave rise to it was elaborated in 1874 by Messrs. Tiemann and Haarmaan. In studying coniferine, these scientists found that it was formed of a glucoside which under the influence of a special ferment (emulsine), split up into glucose and coniferic acid. This latter, through oxidation, gives vanilline. The coniferine itself, oxidized with a mixture of sulphuric acid and bichromate, furnishes vanilline. It was by this process that it was first manufactured. The method of purification was very simple. Like aldehyde, vanilla possesses the property of forming an insoluble bisulphite combination, which was separated from the mass and afterward decomposed.

Chemically, vanilline is methylprotocatechic aldehyde:



$$C_6H_3\begin{cases}CHO & (1)\\ OCH_3 & (3)\\ OH & (4)\end{cases}$$

The figures to the right of the atomic groupings represent the relative positions in the benzenic nucleus. They are of considerable importance, since isovanilline, which is constituted by exactly the same groupings, but differently placed, has no odor. After the formula of vanilline became known, an endeavor was made to employ the neighboring bodies, to add the groupings that were wanting, and to properly place them with respect to each other. A host of methods was proposed to this effect, in making use of eugenol (De Laire and Tiemann), which was oxidized by permanganate; of eugenol and bromide of methylene (De Boissieu); and of guaicol and pyrocatechine (Tiemann and Reimer). Vanilline is even found in certain natural products, such as the benzoin of Siam, crude beet sugar, asafœtida and opium. A certain number of these processes is employed industrially.

Piperonal or heliotropine is closely connected with vanilline. It is in fact the methylenic ether fo protocatechic aldehyde. In order to prepare it, piperic acid is oxidized by permanganate, but it can also be obtained by means of safrol. It is found in the oils of sassafras and shikimal, and can also be obtained from the oil of camphor. Coumarine is the anhydride of ortho-oxcinnamic acid. It has also been obtained synthetically by Perkin, by causing acetic anhydride to react upon the sodium salt of salicylic anhydride. It is especially extracted from natural products, such as the Tonka bean and the "vanilla plant" (*Liatris Odoratissima*) of the United States.

Spirit of turpentine has likewise yielded a perfume, the terpineol of De Laire. To this effect, one can either dehydrate terpine or treat spirit of turpentine directly. This perfume is known under the name of lily of the valley or lilac.

We now come to the two most recent discoveries, viz., the perfume of musk and that of the violet. Natural musk is the product of a secretion of the musk deer, a ruminant mammal that inhabits certain regions of Asia. The perfume is found in a sac which usually contains from 14 to 20 grammes of it. It is also found, but in much smaller or even minimum quantity, in other animals, such as the civet, the musk rat, the badger and the marten. Certain plants, too, often possess the odor of musk. This product is of the highest importance, since it is the base of all artificial perfumes, which sometimes contain considerable quantities of it.

The first process of preparation of a product having the odor of musk was discovered by Messrs. Schaafer and Haffeld, who heated a mixture of dimethyl-benzine, isobutylic alcohol, and chloride of zinc, which they afterward broke up and nitrated. The truly industrial discovery of an artificial musk dates back to 1889, and was made by Mr. Baur, on the occasion of some researches upon the oil of resin.

In order to prepare the Baur musk, chloride of isobutyl is made to react upon toluene (methylbenzine) in the presence of chloride of aluminum. We thus obtain isobutyl-toluene, which, under the influence of nitric acid, is converted into trinitroisobutyl-toluene, which is the somewhat cumbersome chemical name of commercial musk.

There exists, theoretically, a host of analogies and homologues of this musk. A certain number of them have been prepared from xylene, cymene, and the diphenyl and xylyl methanes. A large number of such products possess the characteristic odor of musk.

A no less important discovery is that made a year ago by Mr. Tiemann, who reproduced synthetically the perfume of the violet (called ionone), after a series of researches of the greatest interest from a scientific standpoint.

In order to prepare this perfume, we start from citral, which is itself derived from the oil of lemon, or from the oxidation of the alcohols of the formula $C_{10}H_{18}O$ that we find in certain essential oils: geraniol, linaleol, aurantiol and lavendol. The citral is shaken with acetone and barytes, and pseudo-ionone is thus formed. This body is odorless, and in order to render it odorous it is necessary to convert it into ionone, a product which is very closely related, but which is cyclic, while the pseudo-derivative is of the open chain series. A long series of similar products can be made with other acetones, and these have been studied with the greatest care by Messrs. De Laire and Tiemann.

Messrs. Tiemann and Kruger, on treating orris root with appropriate solutions, have separated various products, and among others, irone, which is the odorous principle of this root, and it was in the wake of these experiments that the synthesis of ionone was made, these two bodies being, in fact, isomerous, and consequently very closely related.—*Le Genie Civil.*

Tailor. "Surely you don't mean to say that you want this coat made with a padding between the shoulders?"

Customer. "Hush! I'm a member of the Cycling Club and a candidate for its presidency."

For most riders there was no necessity for a law limiting bicycle travel to ten miles an hour.

SLANG AND JARGON.

Slang.—A new word that has no just reason for existence; a popular but unauthorized word, phrase or mode of expression; the jargon of some particular calling or class in society.—Webster.

In other words, anything in the way of word or expression not in the dictionary is "slang." When by reason of long continued popularity and general usage it is deemed worthy of a place in the textbook and authority of the language, it ceases to be "slang."

It is from the jargon of particular callings or classes in society that the English language is slowly but steadily enriched. The slang phrase first becomes dignified with the term idiom, and then it creeps into the new dictionary.

Not all slang is destined to this apotheosis, much of it is ephemeral. A great deal of it is meaningless, silly or weak, and dies in its childhood. Actor folks are given to the invention of new phrases more or less expressive, but short lived. "The ghost walks" is one of the few instances of the jargon of stageland.

The theatrical term of "makeup" is now in general use as descriptive of anything striking in personal adornment, referring to the clothing and not to a disguise or enhancement of the features as originally. Song and dance men, acrobats, serio-comics, sketch teams and the lower order of theatrical folk indulge in slang that renders their conversation almost unintelligible. For instance, some knockout artist was struck by the similarity of the words pardon and pudding, and to his bright mind the transition to "tapioca" was not difficult, but there is no probability that the expression "Beg your tapioca" will supplant "I beg your pardon" in the language of the polite world.

The song and dance man may be excused in summer days of bankruptcy in calling the man with money, willing to spend it for refreshment, an "angel" and this expression may in time creep into the language, but for the present the ancient term of "sucker" will suffice.

Circus slang was the forerunner of the jargon of the variety stage, and in the good days when the "gaslit city of tents" was planted upon every village green, the circus folk had a language almost their own.

The roots of their vernacular were the various parts of the tent and equipment of the show. The boss of the show was called the "main guy," and this expression has to a certain extent survived the decline of the circus, and the "main guy" is frequently heard of in workshops.

The great cattle ranges of the west have given to the world the term "roundup." It originally referred to the annual gathering together of the cattle of the various owners that they might be separated for shipment. Today in the business world it indicates an inquiry into the affairs of a firm or corporation, and has really the significance of stock talking.

Thieves have a gibberish so extensive as to almost constitute a language. It is only understood among themselves and by policemen, who are forced to understand its meaning. Many of the terms that have been in use for years are really corruptions of the Hebrew and had their origin among the "fences" or depots for the reception of stolen goods in London. This jargon, while continued for years, has never obtained outside of the police and criminal classes.

"Lost his grip" is a terse, pathetic, almost tragic term, conjuring up as it does the story of wasted ambition, blasted hopes, ruin and despair, in all probability originated among lodge people. A man who had "lost his grip" was temporarily in a dilemma.

From the mining camps of the far west came "struck it rich," which now applies to any human success; "up the flume," signifying failure; "hard pan," which means a solid paying basis; "petered out," which suggests a gradual decline and final suspension of resources; "grubstruck," for assistance given a new business enterprise on condition of a share in perspective or possible profits. Bonanza has been a good English word for twenty years, and the Century dictionary accepted it along with such words as "boom," meaning to manufacture support and enthusiasm, and "squeal," meaning to confess and betray companions.

From the railroad yard came "switched," with the meaning of diverted; "sidetracked," for temporary failure and suspension, the result of outside interference; "ditched," as expressing ruin and collapse, and "wide open" came from the locomotive, which referred to the throttle and the extreme of speed. Now it means in full swing, reckless and regardless of interference.

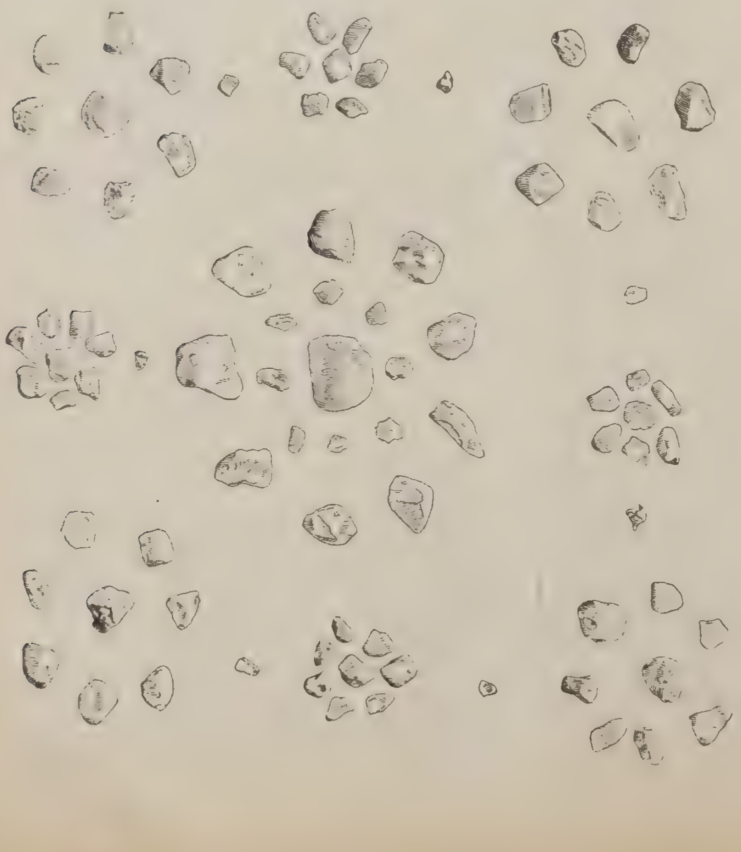
"Out of sight" is an anachronism, as it means plainly in sight, and it is growing more and more in favor every day as a synonym for the superlative in appearance, accomplishment or performance. It was the balloon soaring toward the sky that was first declared out of sight, and then came the adaptation of this new form of expressing altitude and exemption from competition. For instance, when Assemblyman Joseph Cahill appears with his fearfully and wonderfully plaided trowsers, which are said to have drowned the roar of the surf at Manhattan beach, his admiring constituents cry out: "Get onto Cahill's pants! They are out of sight!"

The race track has given us "cinch," as meaning something settled beyond all doubt or peradventure. A cinch is a saddle girth, tightened by the Spanish method of a complicated knot that will not come untied. Hence cinch, or something cinched, or all settled beforehand, can't lose. Sabe?—*Exchange.*

CALCULI DISSOLVED BY THE

BUFFALO LITHIA WATER

The following plate is from a photograph and represents the exact size and shape of Calculi passed by the Hon. T. J. Jarrett, ex-Mayor of Petersburg, Va., under the action of Buffalo Lithia Water.



Statement of Dr. John Herbert Claiborne, M. A., M. D., of Petersburg, Va., ex-Presiden and Honorary Fellow Medical Society of Virginia.

PETERSBURG, VA., Sept. 5, 1892.

E. C. LAIRD, Buffalo Lithia Sprnigs, Va.

My Dear Doctor:—I send by this mail a box of CALCULI, passed at various times within the last year by Hon. T. J. Jarrett, our former mayor, whilst drinking the BUFFALO LITHIA WATER. They give him but lttle pain now when passing. I have never critically examined the broken CALCULI, passed in such quantities from Mr. Jarrett's bladder, but am under the impression that the most of them were MANESIAN PHOSPHATES. There were specimens, however, which presented the appearance of OXYLATES, and, I remember, impressed me specially as being URIC ACID. I do not pretend to account for the mode of their solution by the Buffalo Lithia Water. There is nothing in its analysis which would warrant such results, but THE RESULTS ARE THERE, and seeing is believing. I can only suppose that in Nature's alembic there has been some subtle solvent evolved, too subtle to be caught by our coarse agents, which makes this wonderful disintegration. "There are many things in heaven and earth not dreamt of in our philosophy," and his is a short creed who believes only what he can prove or explain. Faithfully yours, JOHN HERBERT CLAIBORNE.

It is well known that stone in the bladder, for the most part Gout, Rheumatic Gout, Rheumatism, and also various forms of Dyspepsia and Nervous prostration have a common origin, viz.: excess of uric acid in the blood. It is evident, then, from the foregoing statement, that this water must possess extraordinary potency alike in all of these maladies. In Bright's Disease of the kidneys it is well-nigh specific.

Water in cases of one dozen half-gallon bottles, $5.00, f. o. b. here, and for sale by all first-class druggists.

Illustrated 32-page pamphlet, giving further information, sent prepaid on application to

THOMAS F. GOODE, Proprietor,

BUFFALO LITHIA SPRINGS, VA.

WHERE TIME IS NOT WASTED.

Many boys, remarked an exchange, start out in a business which they do not expect to follow for life, because in that line an opening occurred just when they wished for a place. They are apt to look upon the years thus spent as "time just wasted," when they are at last settled in their chosen calling. But if they have done their duty in it such is very far from the case. The knowledge of business and of men which they have gained and the working habits they have formed will be of the greatest service. As the late Mr. Lawson Valentine remarked: "The great thing to do for a business boy is to throw himself into something; I should not be particular what, so that it gives him a chance to begin, and make him understand that he was to make his way from that point. I should tell him to 'get to work in the quickest possible way,' and I should emphasize this to him, thinking it more important that he should go at it than that he should go at it in any particular way. Go at-it-iveness is the first condition, and stick-at-it-iveness the second."

Peter Cooper was a working boy who did not pick and choose a great deal in the matter of what work he should do in his earlier years. He tried his hand at many crafts before he settled on one which made his fortune, yet he picked up information of great value in each place, which told on his life business. A man who does nothing all his life but make button molds or shoe pegs may make them exceedingly well, but he is apt to be but little in advance of the machine he employs, and the smaller his specialty the narrower in general is his prejudice in its favor. The man who has mixed intimately with people in their several walks in life is apt to look much more respectfully upon their callings. Mr. Valentine considered a boy's "place" the best business school, yet many who cannot avail themselves of their advantages have been able to pick up among their fellow-clerks a knowledge that served them well instead.

A boy can establish a reputation for himself, even at carting bricks. Someone will know whether he is faithful or not. He is making a reputation for himself even though his toil seems to be in a very obscure corner. It is astonishing how soon a superior boy is known—one of sound principles and thoroughly industrial habits. Such boys are so scarce that the supply is always less than the demand, and people keep a sharp lookout for them and bid them take a higher seat.—*Canadian Grocer.*

Many a politician has left his party the moment he found there was nothing left in it for him.

Little Johnny suggests that the bees must have a hard time of it to keep their combs so clean of hair.

It is expected that the summer girl will get married this winter, if her engagements permit.

ESTABLISHED 1823.

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DISTILLERS OF

Y. P. M. WHISKIES

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FOR SALE BY

ACKER, MERRALL & CONDIT and PARK & TILFORD.

NEUROSINE THE MOST POWERFUL NEUROTIC ATTAINABLE.

ANODYNE AND HYPNOTIC.

A reliable and trustworthy remedy for the relief of Hysteria, Epilepsy, Neurasthenia, Mania, Chorea, Uterine Congestion, Migraine, Neuralgia, All Convulsive and Reflex Neuroses. The remedy par excellence in Delirium and Restlessness of Fevers.

FORMULA: Each fluid-drachm represents 5 grains each, C. P. Bromides of Potassium, Sodium and Ammonium, 1-8 grain Bromide Zinc, 1-64 grain each of Extract Belladonna and Cannabis Indica, 4 grains Ext. Lupuli and 5 minims fluid Ext. Cascara Sagrada, with Aromatic Elixirs.

RICHMOND, VA., Sept. 29, 1891.

I prescribe NEUROSINE in the class of cases for which it is indicated, daily, and with satisfactory results. It completely relieves restlessness in Fevers.

Landon B. Edwards

Ed. Virginia Medical Monthly.

MEMHPHIS, TENN., Feb. 6, 1892.

I obtained happy results from the use of NEUROSINE. It is certainly the best neuralgic medicine I have used. I have tried it in some cases of Trifacial Neuralgia, after having tried some of our most powerful remedies. None acted as well as NEUROSINE.

Editor Memphis Medical Monthly.

MEMPHIS, TENN., Jan. 7, 1891

I have obtained entire satisfaction from the use of NEUROSINE in cases of Neuralgia.

Dean Memphis Hospital Medical College.

CHATTANOOGA, TENN., Sept. 6, 1891.

Having used NEUROSINE in a number of cases I must say the preparation has given better results and more universal satisfaction than any other combination ever used by me. Have tried it in many nervous affections; in some it is a specific, in others a therapeutic agent of very great value.

W. L. Gahagan

Coroner of Hamilton County.

MCKENZIE, TENN., Feb. 12, 1891.

NEUROSINE had such a happy effect in a case of Neuralgia or Congestive Headache, in which I tried it, often having failed on other things of similar nature. The case was one of long standing Sick Headache of peculiar character. The lady, three days after confinement, without any fever, took severe headache. NEUROSINE relieved her immediately.

R. D. Erwin

FOURCHE ARCUAULT, MO., March 29, 1892.

I sent about two tablespoonfuls of NEUROSENE to an old lady, aged 84 years; she had been complaining for some weeks with Headache and Neuralgic pains all over her body more or less. She took that small amount and has been quite free from pain ever since, went to church in a farm wagon, 1½ miles, rough road, and is still free from pain and sleeps and eats better. I am well pleased with it.

U. H. JOHNSON, M. D.

DOSE: From one teaspoonful to a tablespoonful, in water, three or more times daily, as may be directed by the physician

Supplied in Eight-Ounce Bottles.

To any Physician, unacquainted with the medicinal effect of Dioviburnia and Neurosine, we will mail pamphlets containing full information, suggestions, commendations of some of the most prominent professors in medicine and various methods of treatment. Or to those desiring to try Dioviburnia and Neurosine, and will pay express charges, we will send on application a trial bottle of each.

DIOS CHEMICAL COMPANY, ST. LOUIS, MO.

BUSINESS WORRIES AND THEIR EFFECTS.

"I have had occasion to observe in my practice during the past ten months," said a prominent New York physician the other day, "a remarkably large increase in the number of cases wherein great troubles were developed in the digestive, assimilative, circulatory and respiratory systems, by the disturbing influences transferred directly from the brain and nerves, such transference being clearly traceable and in some cases manifesting almost as specific poisoning. The extraordinary anxieties and troubles business men have been called upon to go through in that time have indeed produced what may be almost regarded as a new class of disorders having neurotic bases, but manifesting in the most unusual ways in every sort of tissue. Of course, every intelligent person knows that strange physical effects are often the resultants of mental action, as when modesty compels blushes, sudden excitement induces palpitation of the heart, embarrassment impedes respiration, fear acts on the bowels, fright turns the hair grey, intense efforts of imagination provoke violent pains, and even, in certain hypnotic experiments, make actual wounds in muscular tissue, and so on. But, in the new class of cases to which I alluded, severe mental strain seems to have been the real producing cause of specific physical maladies, often acute and sometimes simulative of chronic ailments, with symptoms developed in a few days which under ordinary circumstances would not be at all likely until the disorder was of long standing."

All of that goes to enforce our realization of the intimate connection and co-relation of mind and matter in our physical organisms, and perhaps to encourage more than a suspicion that there may be after all something in the oculist's claim of an astral being, within the physical, one in which are all the centres of sensation, between which and the mind the bond is so close as to make practical unity, and in which start all disorders which subsequently make themselves apparent to our sensuous perceptions in the physical body. However this may be, it stands to reason that the higher the condition of physical health, the less likely the body is to be evilly affected by mental inquietudes and as "the blood is the life" our first and constant care should be to keep that fountain of life forces pure and rich, suitable for the nourishment of both the thinking organ and the acting body in all its organs and members. This would be difficult without radical change in almost every detail of our life habits, were it not for the beneficent discovery by curative science of a class of remedial agents known as "alteratives," which have the desired effect by cleansing, stimulating and strengthening all the organs of digestion, assimilation, elimination and excretion, so that by the normal exercise of their functions they jointly supply such good blood as is the primary requisite for health. The best of these alteratives known to the medical profession are happily combined so as to secure their highest efficiency in the preparation now known all over the world as Ayer's Compound of Sarsaparilla, and until millennial "good times" come again men will do well to fortify themselves against the disease-breeding shocks of adversity by the aid of this potent medicine. Its ingredients are well-known for there has never been the slightest effort to conceal the formula of its preparation from the extracts of sarsaparilla, stillingia, yellow dock, and mandrake and iodide of potassium, and experience has demonstrated the world over that it fully deserves the high distinction accorded to it by admission to the Chicago World's Fair as an exhibit, when all other "blood purifiers" were rigidly excluded.

It's Education—

simply a matter of education—the use of **Pearline** for washing and cleaning. The bright women, those who learn quickly, are using it now. The brighter the woman, the larger her use of it—the more good uses she finds to which she can put **Pearline.** Dull women, those who never use new things until their bright sisters have drummed it into them—they'll use it presently. It's just a question of sooner or later, with every woman who wants the best.

Send it Back Peddlers and some unscrupulous grocers will tell you "this is as good as" or "the same as Pearline." IT'S FALSE—Pearline is never peddled, and if your grocer sends you something in place of Pearline, be honest—*send it back.* 404 JAMES PYLE, New York.

BUSINESS NOTES.

Do not allow that cold or that bronchial affection to become seated, when a remedy may be had to check it in its early stages. One we can safely recommend in all such cases is Scott's Emulsion of Pure Cod Liver Oil with Hypophosphates of Lime and Soda, which has proved its great value in arresting the progress of consumption and all diseases of the respiratory organs. In fact, it has been used in numberless cases of acute and chronic colds and bronchitis with surprising effect. In that most distressing affection, influenza, also, it has proved of great value, especially during the progress of the epidemic known as "la grippe." All who are subject to sudden changes of temperature, and are therefore liable to take severe colds ought to have it on hand. It proves a boon in the household, saving much suffering and many doctor's bills.

A GENTLE LAXATIVE.

The profession as well as the public have long appreciated the importance of a simple laxative. Time out of mind remedies have been in everyday use in the home for this purpose, but it remained for the California Fig Syrup Company to furnish a pleasant, potent, perfect laxative, safe to be used in the home of members of the family of all ages.

The company has frankly informed the medical profession that the chief laxative ingredient of their compound is senna, so treated that all tendency on its part to gripe and produce irritation and subsequent debility in the bowels is removed. The chief feature claimed by the company for their Syrup of Figs is the fact that the component parts of the product have all disagreeable taste disguised by a mingling of aromatic carminatives in such a way as to make it really pleasant to the taste; and these aromatics at the same time overcome all disposition upon the part of the drug to pain and discomfort; and carrying as it does the stamp of the company's responsibility, it is always reliable and uniform in its effects.

It is conceded by every practical physician that a family laxative is one of the few medicinal agents which they will entrust to family use, and surely anything which will tend to assist in the relief of that bete noire of child and adult life—constipation—is a helper in the direction of general healthfulness.

The medical profession has not only consented to the use upon the part of the families under their care of Syrup of Figs, but when desiring to order gentle purgatives and simple laxatives they cheerfully specify in their prescriptions the product referred to; and the wonderful success of this gentle family laxative is largely owing to its universal use by the medical profession.—*Medical Mirror.*

It is better to have a wife who bangs her hair rather than one who bangs her husband's head.

HOW'S THIS?

We offer One Hundred Dollars reward for any case of Catarrh that cannot be cured by Hall's Catarrh Cure.

F. J. CHENEY & CO., Toledo, O.

We, the undersigned, have known F. J. Cheney for the last fifteen years, and believe him perfectly honorable in all business transactions and financially able to carry out any obligation by their firm.

WEST & TRUAX, Wholesale Druggists, Toledo, O.
WALDING, KINNAN & MARVIN, Wholesale Druggists, Toledo, O.

Hall's Catarrh Cure is taken internally, acting directly upon the blood and mucous surfaces of the system. Testimonials free. Price, 75 cents per bottle. Sold by all druggists.

FUNK & WAGNALLS STANDARD DICTIONARY.

After five years of labor, with the help of 247 editors and the enormous expenditure of nearly one million dollars, the Funk & Wagnalls Company announce that the last page of the second, the concluding, volume of the new Standard Dictionary, is now in type. This volume will be ready for delivery in November.

The hearty reception extended the Funk & Wagnalls Standard Dictionary by the literary public in England is one of the literary surprises of the past year. The eminent English novelist, A. Conan Doyle, now lecturing in this country, recentlv wrote from London to the publisher as follows:

LONDON, 12 Tennison Road, South
Norwood, August 20, 1894.

Gentlemen;—I wrote once before to commend your dictionary, but I feel bound to do so again after a longer experience with it. It has become quite a joke with us that we can not trip it up. We have several times been sure that we would, but have always failed. Within the last week I have had occasion to turn it up for "gyp," "coffie," and "coshering," always successfully. Is the second volume purchasable?

Yours faithfully,

A. CONAN DOYLE.

Hon. Justin McCarthy, the historian, and member of the House of Commons, London, Eng., recently wrote:

"I refer to it [the Standard Dictionary] every day—never once without feeling that it has given me a helping hand in my studies and in my writings. I regard it as a monumental work—a work, thus far, perfect of its kind, and for its purpose destined to be a conclusive authority to the English-speaking peoples, and to other peoples as well, for many a generation."

The sales of the new Standard Dictionary are phenomenal. The publishers have a mathematician who has figured out that if the copies required to fill the advance orders were laid one on top of the other, the stack would be over three miles high, and laid end to end would make a path over fifteen miles in length.

A general agent in Michigan startled the publishers of the new Standard Dictionary by an order for two car loads—43,000 pounds—of dictionaries, to be sent as soon as Volume II is ready.

THE NEW SCIENCE REVIEW.

ANNOUNCEMENT.

There are many scientific periodicals. The *New Science Review* differs from all of them. It is new in every sense—new in its appearance, new in its methods, new in its aims. It does not attempt to supersede the older and more conservative periodicals, but to supplement them. Those address themselves to the specialist, this to the public at large. While yielding to none in the scientific value of its material, it strives to present it in a popular style. It does not assume that the reader has an esoteric acquaintance with the matter in hand, nor start from that point—it supplies him with a standpoint; it explains before it demonstrates. Thus it occupies a position midway between the ponderous scientific journals and the lighter magazines. It is as valuable as the first—as interesting as the latter. But it conflicts with none. It has a distinct individuality.

The quarterly method of publication has been chosen because it has been thought that this affords ample time for the exploitation of every new theory, invention, or discovery that may hold the public attention during the interim. When the *New Science Review* speaks, it will speak with authority. It will have weighed the evidence impartially. Its decisions, if not infallible, will be in accordance with the latest development of modern thought.

TRANSATLANTIC PUBLISHING CO.,
63 5th Avenue, N. Y.

WHAT WILL THE NEW YORK CENTRAL DO NEXT?

After having his thirst whetted, like a tiger by the taste of blood, by the wonderful performance of Engine No 999, the genie who presides over the transportation department of the New York Central Railroad is rampant again, and laboring persistently to find means of attaining the speed of lightning. He is at work in his cell, by stealth and at midnight, and before many moons have passed we expect to see a terrible apparition coming up the Hudson river like the war chariot of Jove.

We may expect a monster engine, with double boilers of enormous power and wheels as tall as a shot tower—which will trot up to Albany in an hour, skip over to Utica or Syracuse at half an hour schedules and cover the distance from New York to Buffalo in three hours. Then we shall find some means of artificial respiration.—*Medford (Mass.) Mercury.*

MISCELLANEOUS.

ATTENTION TO DETAILS.

One of the essentials to success in business is attention to details. For a commercial enterprise to be sound it is absolutely necessary that its foundation shall be solid. If the base is flimsy it is only a question of time as to when the downfall will come, for come it will sooner or later. From the very start must this question of attention to details be carried out. As old as the hills is the saying, "Take care of the pence and the pounds will take care of themselves." With equal truth can we say, "Take care of the details and the generalities will take care of themselves." As examples of this every large business concern may be instanced. From small beginnings they became great; when they gave evidence to the world that they were capable of filling small orders in a careful and proper manner the world soon entrusted them with large orders. Had they sneered at the small orders as too trifling for their attention it may be taken for granted they never would have obtained the large business for which they were anxious.

THE ADVANTAGES OF A FAD.

The man who undertakes to cultivate some fad like the growing of plants, the raising of fish, photography, entomology, boating, bicycle riding, athletic sports, microscopy, painting, drawing, music, fishing, hunting, and a thousand and one other things which may come under the head of personal recreation, has always something within his reach which makes him independent of the outside world. The boating man is forever "feeding" his canoe or yacht with paint or varnish and fittings of his own invention. The mineralogist has an endless pleasure in arranging his specimens and in obtaining those which are new. The sportsman fights his battles o'er again, and the fisherman attends to his tackle and invents "facts" to illustrate his next year's exploits. All harmless amusements, but more valuable than gold, because they take a man away from himself.—*Business.*

PHYSICAL ENDURANCE ON THE PIANO.

A novel exhibition of physical endurance and mental musical power is arranged to take place at the Royal Aquarium, London, commencing on Friday, October 26.

Herr Berg, a musician of Berlin, has undertaken to play (for a considerable consideration) on a pianoforte for 30 consecutive hours, and is to continue the recitals, in every week, for a period of thirteen weeks—the 30 hours to be increased during the first six weeks to 36 hours. A selection numbering 400 pieces, many of most difficult execution, has been handed in, all of which the Professor has undertaken to play from memory. A part of the contract is that brilliancy of execution shall be maintained throughout the entire recital. The arrangement with Herr Berg is that the fingers shall not leave the notes of the pianoforte for any one moment during the 30 hours' recital.

Herr Henry Berg is a native of Berlin, his age is 33; he commenced pianoforte practice at the early age of 3 years, and he recently successfully accomplished a 24 hours' pianoforte recital at Carlsbad, and has no doubt but that he will succeed in accomplishing the 30 hours' recital at the Royal Aquarium.—*Exchange.*

It
Knocks
At Your Door.

A true improvement always receives a welcome in the average American home, the most home-like home in the world. The coal stove, the gas, the water, the sewing machine and the clothes wringer have found an entrance everywhere. Another candidate now appears. It is

Cottolene

the new vegetable shortening and substitute for lard. Thousands have found this as great a blessing as its predecessors. It is now at your door. Will you accept its proffer of better cooking in your kitchen, better food on your table, better health in your household?

THE AMERICAN COTTON OIL CO.

Cottolene is sold in 3 and 5 pound pails, by all grocers. Get the genuine. Made by

The N. K. Fairbank Company,
CHICAGO,
St. Louis. New York,
Boston Philadelphia, Montreal,
San Francisco, &c.

ENGLISH CHAMPAGNE DRINKERS.

Since the time when in merry old England Dr. Johnson declared "port" to be the only drink fit for men, the taste of the British wine bibber has undergone a considerable change. Some stout-hearted old country squire may still keep up the habit of "passing the bottle" around the board, but the "six bottle men" have long since died out. It may be the tendency of modern life which has brought about a change in the habits and pursuits of the English gentry, and driving them from the hunting fields, the stage coach and rural sports in general into city life, has forced the sturdy port to give way to the milder claret and the sparkling champagne.

With characteristic thoroughness the Briton has cultivated and perfected this new taste till it can well be said that the buying, the keeping, serving and the drinking of wine has become an art with him. This is particularly evident in the importance the English give to the purchase and treatment of champagne. Not satisfied if the label merely bears the name of one of the well-known champagne houses, he gravely sets about to investigate the merits of the different brands and vintages offered to him, and will have none but the best. Thus each year when the great champange firms send their vintages to the English auctions, which are such a notable feature of the English wine trade, the leading wine merchants and the purchasers with established reputations for fine palates meet in solemn conclave, and after many tastings, decide as to which wine the palm should be given. So subtle is their knowledge and judgment that their opinion is final and finds its expression in the prices paid for the different brands at these sales, which give the keynote for prices throughout the English markets.

The English wine drinker is always willing to pay the highest price for what he considers the best wine, but even at that he gets his champagne much cheaper than Americans can get the same thing. For instance, we find in a recent number of Ridley's Wine and Spirit Trade Circular the following quotations per dozen of familiar brands of champagnes of the vintage of 1889; Pommery, 83 to 88 shillings; Moet, 75 shillings; Perrier Jouet, 72 shillings, and G. H. Mumm, 70 to 75 1-2 shillings. These same brands would cost the American consumer in his home market nearly double the price paid in England, a fact largely due, of course, to our duties on champagnes. But another peculiar thing about the champagne market in America is the lack of distinction in price in purchasing. The consumer here pays about the same price for all brands of reputable champagnes, and thereby creates the impression that one wine is about the same as another to him so long as it is a reputable champagne.

And yet we have in our country as good connoisseurs as there are in England. But the average American wine drinker will rarely take the time and the trouble to try the relative merits of the different brands, and too often leaves it to the knight of the bar or the garcon, who not infrequently permits self-interests to influence the choice of the brand.

The Englishman once in the possession of the brand he prefers, stores it with punctilious care in his cellar, which is admirably adapted for keeping the wine for years in the best of condition. The English climate also favors wine preservation. Any good cellar in England will not show a greater variation in temperature than a few degrees throughout the year. In America we are at a disadvantage. In our climate, even in the best of cellars, the temperature varies thirty degrees and more. This makes it impossible to keep so delicate an article as champagne from leaking.

The Englishman also serves champagne differently from the manner in which it is served in our country. True to our predilection for ice-cold drinks, we insist upon the bottle being as cold as Greenland, and some even go so far as to have the champagne "frapped," and are not satisfied unless the liquid is turned into a frozen mass. To the Englishmen this process seems a wrong done to the subtle flavor of the wine, which is destroyed by intense cold. He is careful to leave the champagne in the ice cooler only for a short time before it is consumed, and believes that thus he loses none of the delicate bouquet of this prince of beverages.

◆

HE'S DEAD, AT PRESENT.

Julius Cæsar was considered a great man, and so he was. But he had his limitations. We may give a few illustrations: He never rode on a 'bus in his life; he never spoke into a telephone; he never sent a telegram; he never entered a railway train; he never read a newspaper; he never viewed his troops through a field-glass; he never read an advertisement; he never used patent medicine; he never cornered the wheat market; he never crossed the Atlantic; he never was in a machine shop; he never went to a roller skate rink; he never controlled a manufacturing company; he never dictated a letter to a typewriter girl; he never invested in railway stock; he never played a game of billiards; he never saw an electric light; he never listened to a phonograph; he never posted a letter; he never had his photograph taken.

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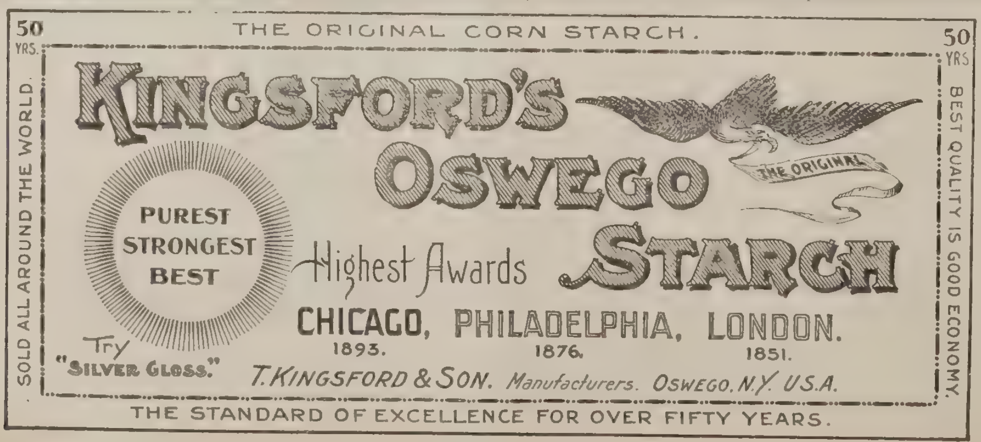
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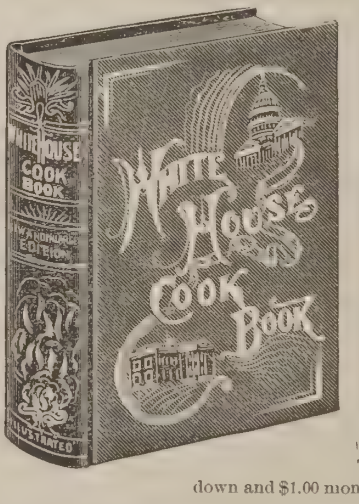

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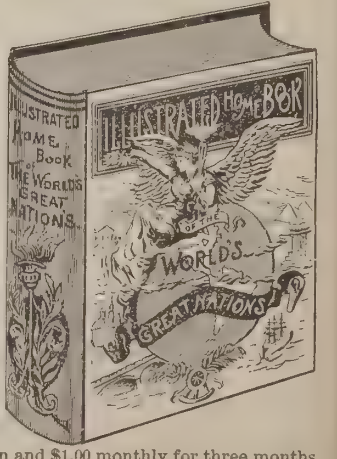

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TESTED RECEIPTS.

Every receipt here given is original, has been practically tested by the AMERICAN ANALYST and is therefore confidently recommended.

PICKLES, PRESERVES, ETC.

PICKLED ONIONS.

Peel the onions, which should be fine white ones—not too large. Let them stand in strong brine for four days, changing it twice. Heat more brine to a boil, throw in the large onions and boil three minutes. Throw them at once into cold water and leave them there four hours. Pack in jars, interspersing with whole mace, white pepper-corns and cloves. Fill up with scalding vinegar in which you have put a cupful of sugar for every gallon. Cork while hot. They will be ready for use in a month, but will be better at the end of three months.

NASTURTIUM SEED.

Take the green seed after the flower has dried off. Lay in salt and water two days, in cold water one day; pack in bottles and cover with scalding vinegar, seasoned with mace and white pepper-corns and sweetened slightly with white sugar. Cork and set away four weeks before you use them. They are an excellent substitute for capers.

PICKLED BUTTERNUTS AND WALNUTS.

Gather them when soft enough to be pierced by a pin. Lay them in strong brine five days, changing this twice in the meantime. Drain and wipe them with a coarse cloth; pierce each by running a large needle through it, and lay in cold water for six hours. To each gallon of vinegar allow a cup of sugar, three dozen each of whole cloves and black pepper-corns, half as much allspice and a dozen blades of mace. Boil five minutes; pack the nuts in small jars and pour over them scalding hot. Repeat this twice within a week; tie up and set away. They will be good to eat in a month—and very good too.

SWEET TOMATO PICKLE.

(*Very good*)—Seven pounds ripe tomatoes, peeled and sliced; three and one-half pounds sugar, one ounce cinnamon and mace mixed, one ounce cloves, one quart of vinegar. Mix all together and stew one hour.

PICKLETTE.

Four large crisp cabbages, cut fine; one quart onions chopped fine; two quarts vinegar, or enough to cover the cabbage; two pounds brown sugar; two tablespoonfuls ground mustard; two tablespoonfuls black pepper; two tablespoonfuls cinnamon; two tablespoonfuls turmeric; two tablespoonfuls celery seed; one tablespoonful allspice; one tablespoonful mace; one tablespoonful alum, pulverized. Pack the cabbage and onions in alternate layers, with a little salt between them. Let them stand until next day. Then scald the vinegar, sugar and spices together and pour over the cabbage and onion. Do this three mornings in succession. On the fourth put all together over the fire and heat to a boil. Let them boil five minutes. When cold, pack in small jars. It is fit for use as soon as cool but keeps well.

MIXED PICKLE.

Take one pound ginger-root and one-half pound garlic (both previously salted and dried); two gallons vinegar; one-half ounce turmeric; and one-quarter pound long pepper. Digest together two or three days near the fire in a stone jar; or gently simmer them in a pipkin or enameled saucepan. Then put in almost any vegetables except red cabbage and walnuts, all previously salted and dried.

PRESERVED ORANGE PEEL.

(*Very nice.*)—Weigh the oranges whole and allow pound for pound. Peel the oranges neatly and cut the rind into narrow shreds. Boil until tender changing the water twice, and replenishing with hot from the kettle. Squeeze the *strained* juice of the oranges over the sugar; let this heat to a boil; put in the shreds and boil twenty minutes. Lemon peel can be preserved in the same way, allowing more sugar.

CRAB-APPLE JELLY.

Cut Siberian crab-apples to pieces, but do not pare or remove the seeds. The latter impart a peculiarly pleasant flavor to the fruit. Put into a stone jar, set in a pot of hot water and let it boil eight or nine hours. Leave in the jar all night, covered closely. Next morning squeeze out the juice, allow pound for pint, and manage as you do currant jelly. Should the apples be very dry, add a cup of water for every six pounds of fruit. There is no finer jelly than this in appearance and in taste.

CANNED TOMATOES.

Pour boiling water over the tomatoes to loosen the skins. Remove these; drain off all the juice that will come away without pressing hard; put them into a kettle and heat slowly to a boil. Your tomatoes will look much nicer if you remove all the hard parts before putting them on the fire, and rub the pulp soft with your hands. Boil ten minutes, dip out the surplus liquid, pour the tomatoes, boiling hot, into the cans and seal. Keep in a cool, dark place.

BRANDIED PEACHES OR PEARS.

Four pounds fruit; four pounds sugar; one pint best white brandy. Make a syrup of the sugar and enough water to dissolve it. Let this come to a boil; put the fruit in and boil five minutes. Having removed the fruit carefully, let the syrup boil fifteen minutes longer, or until it thickens well; add the brandy and take the kettle at once from the fire; pour the hot syrup over the fruit and seal. If after the fruit is taken from the fire a reddish liquor oozes from it, drain this off before adding the clear syrup. Put up in glass jars. Peaches and pears should be peeled for brandying. Plums should be pricked and watched carefully for fear of bursting.

ADULTERATION.

ALCOHOL IN TEMPERANCE DRINKS.

A case of considerable importance to manufacturers and sellers of "non-intoxicating" liquors came on for hearing at the Lancaster County, England, Petty Sessions a fortnight ago, when James Warwood, shopkeeper, Morecambe, was summoned at the instance of the Excise authorities for selling alcoholic liquors without a license. Mr. Alpe, of Somerset House, prosecuted, and said the action was brought under the Act of William IV., the penalties sought to be recovered being £10. In the first case of the kind brought by the Commissioners of Inland Revenue, and they had been induced to take proceedings because the manufacture and sale of these so-called temperance beverages—such as hop ale and herb beer—were largely on the increase in the neighborhood. The object was to make manufacturers more careful to keep within the limit allowed by law, viz., two per cent of alcohol. Defendant was a shopkeeper and also had a stall on the sands at Morecambe, where he sold hop ale, herb beer and similar commodities. On August 3d, Mr. Eaton, supervisor, purchased from him a bottle of hop ale and two bottles of herb beer for the purpose of analysis. They were analysed at

Somerset House, and in one case the proportion of alcohol or proof spirit was found to be 3.4 per cent, in another case 4.34 per cent, and in a third case 2.3 per cent. Samples of this kind of drinks had been taken which showed that in some cases they contained from 8 to 10 per cent of proof spirit, whilst the strength of good ordinary beer was from 7 to 8 per cent, so that not only was there an evasion of the law, but these beverages were foisted upon the public as temperance drinks when they really contained more alcohol than ordinary beer. In the course of the case it was remarked that had the liquor been drunk instead of sent for analysis, the penalty would have been £25 instead of £10.—Mr. Eaton said he had warned defendant and all the sellers of these drinks that they contained alcohol, but no notice was taken of the warning, and therefore these proceedings were instituted. Mr. Tilly, for the defence, said Mr. Warwood was innocent of any intention to evade the law. He bought the beverages direct from the manufacturers, and sold them as he bought them. It was, however, impossible to manufacture these beverages without alcohol, because the process of fermentation, which was one of the elements of their manufacture, produced alcohol. Mr. Alpe pointed out that it was possible to make these drinks without alcohol, and stated that one well-known temperance "ale" contained only one per cent of alcohol. The Chairman (Mr. E. B. Dawson) said defendant had not intentionally done wrong, but these drinks were foisted upon the public as non-intoxicants, and no doubt hundreds of people were deluded. A fine of 10s, and costs was imposed.

COFFEE AND 50 PER CENT CHICORY.

At Alfreton Petty Sessions, Thomas Sabin, grocer, of Prospect street, Alfreton, was charged with having sold coffee which contained 50 per cent of chicory, at Alfreton, on the 21st of August. William Marples went to the defendant's shop and purchased 1-4 pound of coffee. The coffee was put into plain paper and did not bear a label. The defendant's daughter supplied the coffee, and nothing was said about it being a mixture. Colonel Shortt said he received the coffee from the last witness. He sent the coffee to the public analyst, who found it was adulterated with 50 per cent of chicory. Defendant, who pleaded ignorance of the law, produced a tin labelled "Coffee and Chicory," and said Marples was served with coffee from the tin. Colonel Shortt, in reply, said the packet ought to have been labelled, or the seller ought to have said the coffee contained chicory. Defendant was fined £1 11s., including costs.

Thomas James Robinson, grocer, of Russell road, Garston, was summoned at Liverpool on September 29th, for selling adulterated coffee. It was stated that on the 6th ult. a female went into defendant's shop and asked for a quarter of a pound of coffee. This was supplied to her, and on analysis it was found to contain upwards of 9 per cent of chicory. Defendant admitted the offence, but pleaded that there was no fraudulent intent. The wrapper stated that the coffee contained chicory, and he thought he was thereby protected. The Bench imposed a fine of 10s. and costs.

CHEAP AND NASTY TEAS.

At the City of London Court, on September 26th, the Deputy Judge heard the case of Calthorpe vs. Harrison. The plaintiff is a tea merchant in the city, and the defendant is a grocer in Seven-dials. The claim was for £7 for a quantity of tea dust supplied to the defendant. which it appeared was purchased from the plaintiff at 2 1-2 d. per lb. Plaintiff was called and stated that the article he sold to the defendant was a marketable commodity, but as he had had it a long time in stock he wished to get rid of it. It was tea, but he expected to find a certain proportion of foreign matter in the stuff. He had had it warehoused for two years. In the ordinary course of business good tea dust realized from 6 d. to 7 d. per pound. In cross-examination he said that this "tea" might be the same sort of tea that was supplied to the Salvation Army for their shelters. The defendant stated that he had been selling the "stuff" for some time before he discovered its bad quality. It would have been impossible for him to have told by the sample package, without analysis, that it was adulterated. The reason that he bought it at such a low price was that it had been warehoused for such a considerable time, and that plaintiff desired to get rid of it. He did not sell the tea dust by itself, but mixed it with other teas. It was mixed with cheap teas, and sold at 1s., 1s. 3d., and so on, per pound. Mr. Cripps, analyst to the Strand Board of Works, deposed that the sample of tea dust had been submitted to him for analysis. On examination he found it contained 13 1-2 per cent of mineral matter, 6 per cent of which was silicate of sand. In the ordinary course of his duty he would have condemned such a sample. In cross examination, witness said that the 13 1-2 per cent he alluded to was not "foreign" but mineral matter. His Honor said that no tradesman could be expected to sell such stuff as this when he found out what it was. There would be a verdict for the defendant, less the cost of the amount he had sold.

MALT EXTRACTS.

A BREWER'S VIEW OF THEIR MERITS.

We learned, a short time ago, through a pamphlet issued for the purpose of praising the beauties of the genuine Johann Hoff's Malt Extract, that this magic beverage possesses the quality to liquefy sixty per cent of starch meal.

The chemist who found this lives in Glasgow (Scotland) he has the title of Doctor with the following appendix: F. I. C., F. C. S. and his name is J. J. Coleman.

Among other things he says the following:

"The word 'Malt Extract' is, by common consent of chemists, applied to that portion of a malt liquor which has not either been fermented into alcohol, or which after fermentation, has escaped conversion into alcohol. Further malt extract is a solid, it requires four times as much as any of the others to effect the same result.

"The total result is as follows, the figures being calculated to avoid decimals, and to show the amount of starch in the bread, which became soluble by the agency of the various liquors, the bread used in each case being of the same weight:

	per cent of the starch.
The Burton Ale dissolved,	5
The London Porter dissolved,	40
The Wrexham Ale dissolved,	26
The Genuine Johann Hoff's Malt Extract,	60

"The importance of an agent like Johann Hoff's liquid upon the digestion and nutrition may be estimated, when it is considered that starch forms so large a proportion of the diet of man, that in its natural state, or even when boiled, it is not soluble in the sense of being capable of absorption through a membrane (although it may become pasty or sticky) and that before it can be absorbed by the assimilative organs, it must become soluble."

This is one of the brightest chemical-physiological demonstrations of the present day in connection with a mystery which gives an importance never thought of before to the nutritive value of beer. (All fermented malt extracts are beers.) Heretofore it was believed that nothing could be said of any starch transformation after the reaction of the malt diastase in the human body, for the reason that this diastase is completely lost during the boiling of the wort. As a matter of fact, however, there do exist in the human body also other starch converting agents, which have nothing to do with malt extracts.—*American Brewer.*

THE CHOCOLATE ADULTERATION CASE.

The Glasgow Health Committee have decided to appeal against the decision of Sheriff Birnie in dismissing the case against Downie Brothers, Candleriggs, who were charged at the instance of the Sanitary Authorities with selling chocolate cigars containing 4 per cent of paraffin wax. This decision is to be commended. The use of paraffin wax in food is intolerable. It has recently been employed for waterproofing buildings in New York by the following method:

The work is done by two men on a suspended painters' stage. The wall surface is first heated by stoves, which are essentially sheet iron boxes 24 inches square and 4½ inches thick, having one of their largest sides closed only by a netting of ½ inch wires. These stoves hang freely from a light chain, and are filled with burning charcoal, which, when the open side is opposed to the wall surface, heats it sufficiently in from five to ten minutes. The paraffin is kept melted over a charcoal fire at a temperature of about 150 deg. Fahr., while the wall surface is warmed to about 180 deg. Fahr. to receive it, and is afterwards treated to a brief roasting to about 200 deg. Fahr. The common hard bricks absorb a variable quantity or paraffin proportional to their porosity and temperature; the average absorption being 21 lbs. per square foot. Parts of the wall inaccessible by the heating stove, mouldings, cornices, and so forth, are heated by the ordinary painters' blow-lamp. A little creosote is added to the paraffin, to prevent vegetable growths. Inasmuch as the wax is caused to penetrate into the masonry, where it sets when it reaches a depth at which the superficial heating has not raised the temperature of the brick or stone above its own melting-point, it is claimed that the treatment is hardly visible from the outside, while it renders any wall perfectly and permanently impenetrable by moisture.

It is very evident that it is better to employ it as a coating for walls than as one for children's stomachs.

MARGARINE VS. BUTTER.

The New York *Medical Journal* says;—Margarine ("oleo" or *artificial butter*) of pure quality is regarded as equal to genuine butter in digestibility and nutritive value. This view is further corroborated by the results of prolonged and thorough experiments reported at length in recent communications of the Vienna Imperial Academy of Sciences. For the experiments, only pure materials were used for the preparation of the margarine.

HYGIENIC.

BALD HEADS.

A LECTURE ON THE CAUSES AND CURE OF BALDNESS.

(By Albert E. Carrier, M. D., Detroit.)

Overlooking the uncovered heads of a large number of people, one may easily arrive at an estimate of the frequency of baldness among the male sex. A woman's uncovered head is usually covered and absence of hair on her scalp is not visible; but the number of bald pates in sight is sufficient to show that alopœcia is not uncommon. Baldness may be a crown of honor, but its possessor becomes a very conspicuous individual, and, if the baldness, instead of occurring in a single spot over the vertex, is made up of several distinct and separate patches, it is in the extreme disfiguring. We are accustomed to look upon bald heads as an inheritance of the aged, the result of the general atrophy of tissues occurring at that time of life, and, of course, permanent, and beyond any relief from medication. But if it appears before the age of forty, it is the result of some pathological condition, that with proper treatment, would have resulted in a saving of the hairy covering of the scalp.

The enormous sale of nostrums warranted to restore to bald heads a natural hairy covering, is evidence of the fact that alopœcia is not a desirable possession.

To every hair is given a certain period or length of life, which varies from four months to as many years. This may be called the natural life of the hair, and, once reached, the hair falls out, and is replaced by another which may grow from the same papilla, or from a new papilla developed by the side of the old one, or from the hair follicle.

In normal conditions of the scalp, each succeeding hair has the same length of life as its predecessor. Other things being equal, the thicker the hair is, the longer is its life, and a gradual decrease in the diameter of hairs replacing those that have fallen out is to be taken as an indication of approaching baldness. The normal scalp covering of hair, then, depends upon new hairs taking the place of those that fall out and being the same size and having the same length of life.

In health the daily loss of hair varies in numbers between thirteen and two hundred. Around the border of a healthy scalp will be found shorter and pointed hairs; normally the term of life of these pointed hairs is less than that of the other hairs, and, in the daily shedding of hair, an equal proportion exists between the short, pointed hairs and the others, of about one to twenty. Any increase of this proportion is evidence of disease. The explanation of this is that these hairs are gradually taking the place of the healthy hairs, and, as the disease progresses, they finally yield to the fine *lanugo* hairs, and later, complete loss of hair results.

Baldness occurring in the course of acute disease, as in erysipelas, syphilis, typhoid fever, eczema and the exanthemata, is usually replaced, during and after convalescence, by the normal covering of hair; cases occurring over limited areas, as the result of severe inflammation, will be followed by recovery, if the hair follicle has not been destroyed in the process; acne and lupus erythematosis sometimes cause permanent baldness, and late manifestations of syphilis in like manner cause a permanent alopœcia.

Congenital baldness is usually a temporary affection, the scalp covering developing between the second and ninth years of life; it is sometimes, however, permanent. Premature baldness, dependent upon heredity, is incurable.

Our interest will naturally centre about those cases which are amenable to treatment, and which experience shows may be cured. We find they occur in three classes, viz: parasitic, seborrhœic, and nervous, which we will briefly consider.

Disturbance of function of the sebaceous glands is the most frequent cause of premature baldness.

You who have examined cases of severe seborrhœa, with its masses of greasy, dirty crusts, mingled with hairs, and attended by a disgusting nauseous odor, will not wonder at being consulted regarding its cure, and the probabilities are that, with proper treatment, the seborrhœa will be cured and the hair saved to the patient. I do not know but it would be better if all cases of seborrhœa were of this character. If the disease has existed for some time you have noticed that under the old crusts the skin is grayish and gives the appearance of beginning atrophy, the result of simple constant pressure upon the part, and if not arrested it ends in atrophy of hair papilla and permanent baldness.

Another form of this disturbance has a very different appearance, and makes its approach in a most insidious manner, so that medical aid is not sought until late in the disease, and when the rapid loss of hair calls attention to the trouble. The condition I refer to is alopœcia furfuracea; it begins between the ages of fifteen and twenty-five years with an increased desquamation of fine branny scales from the scalp; the scales are abundant, filling the hair and falling over the clothing. All parts of the scalp are not affected, but principally the vertex and sides, sparing the occiput.

The scales may be removed by the use of oil, soap and water, but in a few hours the surface will be again covered by them. The skin is healthy in appearance, under the scales, and has its epidermis intact. This desquamation may continue for a number of months, or even years, before marked loss of hair will occur.

There are no subjective symptoms calling for medical assistance; at times there is slight pruritus, but, sooner or later, it will be noticed that with each dressing of the head a constantly increasing number of hairs are combed out, and even in the intervals between the combing they fall out; usually within one year it will be noticed that the hairs are not being replaced, and a marked thinning will be found a little back of the anterior border of the hair, and another spot near the vertex, these two spots finally shedding all strong hairs, and around the borders of the bald patches the hair will be noticed to be thinner.

As the rete cells are continuous from sebaceous gland to outer root sheath, the fatty metamorphosis of these cells in the gland is the cause of the desquamation, it is but reasonable to suppose an extension of this process to the root sheath to be the cause of the loosening of the hair and final destruction of papillæ. The disease is more often met with in men.

Microscopic examination of the skin from a patch of alopœcia pityrodes show thinning of the true skin, while the hairs show atrophic roots.

The disease sometimes occurs as a sequela of variola, continued fevers, syphilis, etc.

Alopœcia areata is characterized by the sudden, or gradual, falling out of hair in patches, varying in size, and usually circular in outline. The hair may fall out at once and the size of the patch be bordered by healthy hair, and never increase, or the loss of the hair may be slower and the patch gradually increase in size. The denuded surface, in either case, appears perfectly normal; it may look a little whiter than surrounding skin, and at times the patches may seem a little depressed, but there are no vesicles, pustules, scaling, etc., and the subjective symptoms are practically nil. At times slight itching may occur. After the disease has lasted a certain length of time the skin shows signs of atrophy.

Young people are attacked by preference.

Some cases are ushered in with evidences of a general disturbance of the system, manifested by anorexia, lassitude, and sometimes by severe neuralgia; when the neuralgia is one-sided, the loss of hair occurs on the side attacked by the neuralgia, but in the largest number of cases no such symptoms are present, patient appearing in most robust health.

In old patches reddened by irritation the redness remains for a longer time than it does in the healthy skin, showing some disturbance of the circulation, but the microscope reveals an atrophied condition. Views vary as to the cause of the disease, between its being a tropho-neurosis, or a parasitic affection. I believe the largest number of cases of alopœcia areata are parasitic. If you have been interested at all in the statistics regarding frequency of this disease in all countries, you will have noticed that when tinea tonsurans is prevalent, there will be many cases of alopœcia areata. Hebra's school is antagonistic to the theory of parasitic origin of the disease, but you find in Germany relatively few cases of this disease, or of scalp ringworm, while in France both affections occur frequently, and her authorities incline to a parasitic origin. Undoubtedly cases occur from organic or functional disturbances of the nervous system, as when the alopœcia is general, or ushered in and attended by severe neuralgia, and those cases where the lesions, while numerous, are very small and depressed below the surface, the depression marked and sharp-bordered. The alopœcia, I believe, in this last class, will always remain. But all these cases and those resulting from injury to nerves will account for less than one-fifth of all the alopœcea areata. During the past year I have treated an unusual number of cases of ringworms of scalp and body.

The characteristic appearance of scalp ringworm with its broken, twisten hair, scales, etc., would give little difficulty in the way of diagnosis, but when other children in the same family or neighborhood show cases of alopœcia areata, with perfectly smooth, white patches, and the hair falling rapidly and the individuals in apparent perfect health, and none of the common symptoms of ringworm, we are still warranted, I believe, in ascribing their causation to a parasite, at present unknown. Two cases under my care at my clinic at St. Mary's Hospital Free Dispensary, I will use as an illustration. S. B., æt. 10, healthy, well nourished boy, parentage English, came to me with a well marked patch of tinea tonsurans, dollar sized. Microscopic examination showed presence of the trichophyton. A month later an older brother came to me with two patches, size of a half dollar each, white and smooth, perfectly free from scales, broken hairs, etc. More than this, the hairs came out suddenly; he was in perfect health, no evidence of nerve disturbance. Repeated examinations of hair failed to show the trichophyton. Was the second case parasitic? I treated both with parasiticides and extracting hairs, etc. The case of undoubted ringworm is under treatment yet, while the doubtful case was cured within three months. Observers have found so many parasites as the cause of alopœcia areata, that discredit has been cast upon the the parasitic theory of origin; but my study of numerous cases, although unable to find a parasite that is constantly present, leads me to the conclusion that a fungus is the cause, and from frequent observance of cases like the one narrated, I believe it to be a parasite allied to the trichophyton. It may be situated in other portions of the skin than hair or hair follicle; at all events, I find nothing to contraindicate a parasitic origin, and cases occurring in otherwise perfectly healthy individuals, I shall treat with parasiticides.

Of tinea tonsurans as a cause of baldness, but little need be said, for if the disease does not pass to the kerion stage, new hairs will replace those that fall, and even without treatment the disease will cease when patient reaches adult life. With severe treatment (croton oil as an example) destruction of the hair may result. As long as hair papillæ evidence a capacity to grow hairs, even if they are the most minute lanugos, there is possibility of a cure. We have stated that many cases of baldness occur in otherwise perfectly healthy individuals, but for this very reason we should be more thorough in our examination for constitutional disturbances; even the slightest ailments should be thought important and treatment directed to their removal. I believe that attention in this direction should precede all other medication for restoration of the hair, I care not whether the case be parasitic, nervous or seborrhœic in origin. Much of the tediousness of these cases is due to the overlooking of coincident, slight ailments.

I shall only call attention in this paper to local medication.

The mild form of seborrhœa (alopœcia pityrodes) from this fact (of mildness) is often neglected until treatment is valueless. It should come under treatment early in its course, before the hairs begin to fall out, and any case of dandruff or seborrhœa, should, when first noticed, be most thoroughly treated. Patients do not like the care and annoyance, nor to take the time, to follow the necessary treatment. There is no disease which tasks the patience of patient and practitioner so severely as that form of seborrhœa.

In the first stage of alopœcia pityrodes we have to overcome the fatty metamorphosis of gland cells and consequent formation of scales, but first the scalp must be cleansed by soaking over night with some bland oil, keeping in constant contact by covering the head with a flannel or oil skin cap. The oil must be freely and thoroughly applied; in from twelve to twenty-four hours the scales will become brittle and then the scalp should be thoroughly washed with soap and water, douching afterwards with hot, followed by cold water.

After drying with a soft towel, the scalp is ready for some stimulating application; my preference is for those that can be used as lotions, rather than as ointments. These applications empty the glands of the accumulated sebum, increase the blood supply, furnishing needed nutriment, and stimulate muscular activity. The mildest remedies that will accomplish the desired effect should be used, as it is not severe, but mild stimulation, that is sought. The medicines used for this purpose may be corrosive sublimate, two to five grains to the ounce, or carbonate of potassium, five to fifteen grains to the ounce, or equal parts of glycerine and water, or naphthol, ten to fifteen grains to the ounce; or we may use ether, tar, sulphur, etc. I lay less stress upon the choice of a remedy than I do upon its thorough application and persistence in its use; following the application of any of the medicines named, it will be noticed that the scalp is dry and the hair lustreless, evidencing a need of fat, which we must supply by external application, *not to the hair*, but directly to the scalp, separating the hairs and applying the fat to the scalp by means of a small tooth brush, rubbing it well in.

The treatment, as I have outlined it, should be repeated every second or third day, until it is noticed that the scales do not form as rapidly as formerly, when the intermissions may be longer, say every third day, then once a week, but not ceasing altogether for several months. Hairs will cease falling as soon as we have overcome the seborrhœa, but in many follicles only the fine lanugo hairs will be found; treatment to induce a stronger growth should then be begun, by first plucking out the soft, fine hairs; *under no circumstances cut them;* following the epilation by applications to stimulate hair follicles; using for this purpose, tannin, ten grains to the ounce, of glycerine, or quinine, ten to fifteen grains to forty grains to the ounce of water. The strength of any of these applications should be as mild as can be used and produce the desired irritation. The scalp should be oiled after each treatment.

Galvanism is also a remedy of great value, using a mild current (two to four milliamperes) for ten minutes each day.

There is one remedy, which, internally administered, seems to have a little influence in stimulating hair growth, namely, pilocarpine. The muriate may be given in doses of one-tenth to one-sixth of a grain, twice daily.

With persistent treatment, as I have outlined, I believe most cases of baldness, depending upon alopœcia furfuracea, may be prevented. A guarded prognosis, however, should be given in every case; for even promising cases will, at times, in spite of all treatment, end in permanent alopœcia.

Baldness due to functional disturbance of the nervous system (some form of alopœcia areata), usually ends in recovery. The brilliant results of treatment in some of these cases, is entirely independent of any medication that may have been used. The tediousness of recovery in other cases and especially those in which the alopœcia is universal, calls for varied and energetic treatment. Massage, two or three times a week, I have found of great benefit, also douches of hot water, followed at once by douches of cold water and then using a solution of salt water, following with the application of some fat. Of great value is galvanism and faradization, using mild currents (two to four milliamperes), in five to ten minutes seances every day. The various stimulants used in the treatment of alopœcia pityrodes will also be found useful. Cases may last for months, or even years, and should never be considered incurable as long as even the finest lanugo hairs are discernable. Cases due to traumatism, ending in destruction of nerve, are incurable, but taking all forms of nervous alopœcia areata, we find they only form some twelve per cent of all cases; the balance I believe to be parasitic, and in addition to other medication, call for parasiticides. It is found very difficult, in ringworm of the scalp, to bring the parasite and parasiticides together, although we know the parts attacked by the fungus, and, as so far we have not been able to locate the parasite of alopœcia areata, treatment is largely empirical, but I believe the good effects of treatment by strong applications of the bi-chloride of mercury, (grains, five to ten to the drachm), and the stronger current of electricity, are due to their destroying the parasite. By all means epilate before using whatever remedy is selected. Blistering with oleate of mercury often gives good results.

Tinea tonsurans will cease when the individual becomes an adult, and unless the disease has ended in kerion stage, causing destruction of hair papillæ, the baldness will not be permanent. The treatment of scalp ringworm is tedious, but cure will follow if it is persistent. It consists in epilation every third day at least, and then using one or the other of the parasiticides already mentioned. The best, I think, is beta-naphthol, ten to twenty grains to the ounce of alcohol.

In conclusion. First—Alopœcia, occurring before the age of forty, will in a large proportion of cases, end in the recovery if properly treated, cases due to heredity, or where hair papillæ is destroyed, excepted.

Second—Alopœcia areata is in large proportion parasitic, with the parasite and its habitant undiscovered, but the parasite is probably allied to the trichophyton.

Third—Treatment, in any case, should begin early and be persistently carried out, more being accomplished by thoroughness than by choice of remedies.

Fourth—An unvaluable prognosis should never be given, as long as hair follicles show even the finest lanugo hairs.—*The Pacific Record of Medical Science.*

THE MANAGEMENT OF THE HAIR.

The hair is to many people an almost constant source of worry, says the *Chemist and Druggist*, and the transference of this worry to the shoulders of the chemist often proves a considerable source of revenue to the latter. In the current number of *Health* Dr. Andrew Wilson gives some useful hints on the management of the hair. There is one very plain rule, he says, regarding the hair and its welfare, which should not be forgotten—namely, that as part of the skin itself the hair sympathizes very keenly in most persons with the general state and condition of the body. Ill-health and mental worry both exercise considerable influence on the condition of the hair, and when ailing people complain of hair-troubles, they may mostly cure themselves by endeavoring to gain the lost general health to which the local hair-ailment may be due.

Another point worthy of attention is a caution against too frequent wetting of the head, especially at the morning bath. This leaves the hair in a damp condition, which cannot but be injurious. On the other hand, this should be no reason for not washing the head, say once a fortnight, to prevent dirt blocking the pores.

Borax and ammonia lotions act harshly, says the doctor, and tend to promote greyness. There is no need to use anything but soap and water for this purpose. It is difficult to understand why so many people object to using a little simple dressing on the hair, for by using some such preparation many people who complain of hair-weakness would cure and prevent further loss. A little dressing applied each morning renders the scalp and hair soft and supple. People with ordinary heads of hair should use something of the following nature:

	Drs.
Castor oil,	2
Almond oil,	14
Glycerine,	6
S. V. R.	2

Perfume may be added, and if a less oily preparation be desired, the chemist can easily modify the ingredients, though a too spirituous lotion is injurious from its drying action. Hard brushes and small combs should be avoided as tending to irritate the scalp, and if used when dandruff is present they increase rather than diminish it. Dandruff or scurf may also be due to over-secretion of the oil-glands, and this is often due to infrequent washing. In treating this complaint the first point is to cleanse the scalp thoroughly. If a shampoo liquid be desired the following may be used:

	Oz.
Curd soap,	½
Liq. ammoniæ,	1
Eau de Cologne,	1
Water to	10

A wine-glass full of this may be used, and the head washed afterwards with tepid and cold water. After this has been done, the hair being kept short, glycerine of borax may be applied every night. This is often useful in removing scurf. If this fail, always avoiding hard combs and brushes, then wash the scalp every three or four days, and use the following:

Resorcin, }
Olive Oil, } each 3 scruples.
Ether, }
Rectified Spirits, 6½ oz.

This should be applied daily, well rubbed into the scalp, and will generally prove effective. Dilutèd ointment of red oxide of mercury is also of great value in preventing and curing this unpleasant condition.

INVENTIONS, SCIENCE, ETC.

PERPETUAL MOTION.

The construction of a machine which shall run by itself without the aid of any outside force has always been a favorite project among those unacquainted with the fundamental laws of force and energy. Even at present, when the impossibility of such a machine has been proved time and again, the perpetual motion crank keeps patiently at work, and the columns of the *Wayback Gazette*, or some other shining light of journalism, contain at more or less regular intervals accounts of a curious machine, "whittled out" by one of its subscribers, which, when once started, will run till it wears itself out. It is needless to say that these machines never materialize in any more tangible form; but a multitude of similar schemes for burning water, utilizing the force of "etheric vibrations," or in some other way making power out of nothing, are being constantly brought forward, and too often succeed in filling the pockets of the shrewd inventors at the expense of the unscientific dupes.

The fundamental fallacy of all theories of perpetual motion is that force or energy can be created. We can no more create a unit of energy than we can a molecule of matter. As far as we know, the total amount of both matter and energy in the universe has always been exactly the same, and all the various phenomena which we observe are due to *changes in the form* of these two great principles. This fact is independent of any metaphysical theories as to the nature and relations of matter and energy; whatever they may be, it is certain that we can neither create nor destroy the smallest amount of either. The universe consists to-day of exactly as many atoms of matter and units of energy as at the moment when it came into existence, and by no possible method can the absolute or relative quantity of either be altered. We cannot transform matter into energy, or energy into matter, but we can transform one form of energy into another with the greatest ease; and of the sixty or more simple forms of matter now known, we can make an infinite number of compound forms, but this is all that can be done; and all the force which we can make use of to run our machinery of every kind must be obtained by transforming the energy which has been stored up in the universe since the beginning.

Since a machine can create no energy, a self-moving machine or a theoretical perpetual motion is an absolute impossibility. Practically all our force is drawn from the sun, as from a great central reservoir, and the supply from this source is so abundant that it may be considered as inexhaustible. A small machine that would derive its motion from the heat of the sun could be easily constructed, and, with proper provision for storing up power for use at night and in cloudy weather, would continue to move indefinitely, like a water-wheel placed under a never-failing stream. This would practically be a perpetual motion, but not absolutely, for the sun is constantly dissipating its stored-up energy, and in the course of ages will become cold and dark, like the earth or moon. Whether this dissipated energy will ever be gathered up again into centers of radiation, and the cycle of astronomical changes now in progress be repeated, is beyond the limits of our knowledge. We can only say that, while it is not impossible, the phenomena of Nature, as at present revealed to us, give little or no indication of any such revivification of the universe. Perhaps this may be made clear to us in some future state of existence, but hardly in the present one.

The direct transformation of the heat of the sun into power and motion is one of the most important scientific problems of the day. At present nine-tenths of all the power used is derived from the solar energy stored up in past ages in the coal beds. In time—and not a very long time, either—these will be exhausted, and the question of a supply of power will become of the most extreme importance. A supply of energy far in excess of all possible requirements is daily given off by the sun, but it is all wasted, as we are unable to utilize it. It is by no means impossible that before the coal beds of the world are exhausted we may be able to run our engines by this waste heat, and become entirely independent of any other sources of power; and in this way, and in this way only, will the problem of perpetual motion be solved—for to construct a machine which would itself produce the energy which moves it, would imply the possession of creative power on the part of the constructor.—*Popular Science News.*

SCIENTIFIC MYSTERIES.

CHEMISTRY CAN BE EMPLOYED TO AMUSE, TO HUMBUG, AS WELL AS FOR PRACTICAL BUSINESS PURPOSES.

A LECTURE BY J. H. NIEMANN.

The following is an abbreviated reproduction of the paper which was awarded the prize offered by the *Chemist and Druggist*, of Australasia, for the outline of a lecture to illustrate "Scientific Mysteries:"

Chemistry is such a very wide subject that one can not do more than treat one branch of it in a single address. I have chosen to treat in a general way some of the parts that color bears in chemistry.

This jar contains different liquids mixed up in such a manner that their condition is indicative of chaos. On allowing it to stand for a little while you see order gradually evolved. The chaotic fluid resolves itself into four different liquids, distinguished by their different colors. The ancients believed that the world consisted of four elements—earth, air, fire and water. We know now, however, that each of these is actually composed of a number of different elements. The earth contains over 60. Water and air also contain a large number—three in practically constant proportions and a large number of others, varying in quantity according to circumstances; while fire is merely the outward and visible sign of certain chemical actions with which we have at present nothing to do. The actual number of known elements amounts to 66, and nature has made each one different in color. Some resemble each other very closely, but there is a difference, apparent on examination, which becomes more strongly marked when seen through the spectroscope, or when each is brought into chemical combination with other elements. This paper has been soaked in a solution of saltpeter and strontia. You see it imparts a rich crimson tint to the flame. This other has been soaked in saltpeter alone, and gives a violet tint. In the first example shown the violet of the saltpeter was obscured by the crimson of the strontia. The spectroscope would separate both colors and enable them to be distinguished, even in the first experiment. The colored fires sometimes used in theatrical performances, etc., are other instances of flames colored by different chemicals. As the smoke from them is not very agreeable, we will content ourselves with one sample only—a green fire. The green is produced by, and is evidence of the presence of, nitrate of barium or some other salt of that metal. It is possible to detect a number of chemicals in one flame by means of this little boiler, which contains spirits of wine and four chemicals—nitrate of copper, strontia and barium, and chloride of copper. On boiling the spirit and turning on the tap the steam may be ignited (in this way). The four colors seen—green, red, yellow and blue—are due to the presence of the four chemicals previously mentioned. Sulphur when burned in the air gives (as you see) a scarcely visible flame, but when burned in oxygen it yields a flame of a bright blue color, as we will proceed to demonstrate. This leads to the production of and some comments on oxygen. We have seen the effect of oxygen in giving brilliancy to burning sulphur, and you will now see that the effect of burning phosphorous in the gas is quite dazzling. The reason is that oxygen has a powerful affinity for other elements, and the process of chemical combination is frequently a violent one, causing, in the experiments shown, both light and heat. Parents will recognize a resemblance between oxygen and their boys and girls, since they have a powerful affinity for certain of the opposite sex, and when brought together they frequently "go off."

The next illustration over which we will spend a moment is designed to show the effect of a certain gas in destroying color. In this bottle we have some oxide of manganese. When we pour on this chemical some hydrochloric acid (commonly known as "spirits of salts") and gently heat it, chlorine gas is liberated and collects in the smaller bottle. This gas has a strong affinity for, and will remove, hydrogen from anything containing it with which the chlorine is brought in contact, changing the colors at the same time, even as hydrochloric acid will change the color of your black suit to red, if you should happen to spill some on your clothes. The gas is very poisonous, but is easily mixed with water (in this way), when its properties may be studied with safety. If this chlorine water is placed in a plate and covered with a bell-glass, a colored flower placed under the cover will shortly begin to lose its color, and will, after a while, become quite bleached. A quicker way of showing its action is to put some into this wine and ink. The color, you see, is speedily discharged. We have here in one glass a little hydrochloric acid and in the other some ammonia. Each gives off a little visible gas, but when the two glasses are brought together they are filled with a thick smoke, the invisible chlorine and ammonia combining to form chloride of ammonium. By the way, it has been ascertained that Italian air contains more chloride of ammonium than that of any other country, and Italy is said to owe its large percentage of singers to the effect of this chemical on the voice; an apparatus is, in fact, sold for inhaling it. Local amateurs might take the hint. A neat little bit of parlor-magic may be done with glasses charged in this way. Hold them apart, blow the smoke of a cigar between the two, bring the glasses together, pretending to catch the smoke, cover them with a handkerchief, and command the smoke to multiply, which it will do in true conjurer fashion.

We now come to a different series of experiments. The first we will take is as effective as the last, from the parlor conjurer's point of view, and is as easily performed. Red iodide of mercury is rubbed on a piece of paper with a cork and the paper is then held over a lamp until the red color disappears. Now, if any one will call out a word I will write it on the apparently blank paper in blood-red characters with a piece of wood, or anything else handy. The explanation is that heating the chemical melts and flattens its crystals, and when their shape is altered their color is altered also—a good illustration of the fact that the color of any article is not one of its inherent qualities, but is dependent entirely on its ability to absorb certain rays of light, and to reflect others. When the crystals are touched they are restored to their original shape and color. I remember startling a worthy old gentleman who handed me a coin to write with when I was performing this trick in public. I mentioned that the color of the writing done with the coin would reveal its previous history, and when the red writing appeared, I proclaimed that the money had been received in payment for blood He was starting to explain how it came in his possession when I exposed the secret and the joke. The effect of heat on color is made use of in magic inks. This paper has been written on with weak sulphuric acid. The writing is invisible; but on holding it over the lamp the characters appear in black. The paper is charred, the corrosive action of the acid being developed by the heat. A more effective ink for invisible correspondence is a solution of chloride of cobalt. The writing done with this fluid is also invisible until heat is applied, when, as you see, it appears in blue, to disappear again, however, if it is simply breathed on. An application of the color-changing property of cobalt is to be found in window-panes painted with a solution of the chemical, or fabrics dyed with it, as in the case of this specimen. In dry weather the material is of a blue tint, but when the atmosphere becomes damp it acquires a pink color, a very neat barometer being thus formed. A fine spray of water on this specimen will show you how it acts.

If you are handy with your paint brush you may produce some startling effects by sketching a landscape with solution of bromide of copper, when you will have a representation of a winter scene (as you see). On heating it, however, it is miraculously transformed into a picture of spring, because the trees and grass were afterward painted over with muriate of cobalt, which turns green when heated, and the sky and water with acetate of cobalt, which turns blue.

A picture even more interesting, I think, is this engraving of Deeming. This wretched criminal was never known to blush during his lifetime, but his spirit is cast in a different mold. When I point the finger of scorn at this portrait of him (wherein his spirit resides), you see he blushes violently, realizing, no doubt, what a vile creature he is alongside such a superior being as myself. I may as well explain at once, lest you should think there is really something uncanny about the portrait—that its cheeks have been painted with a solution of a chemical bearing the unpretentious name of phenolphthalein—a chemical which possesses the property of turning crimson in the presence of ammonia, some of which I had on my finger. You will observe that the blush disappears when the finger (and ammonia) is withdrawn. I have heard of an itinerant quack who created a sensation by utilizing these chemicals. He held forth somewhat after this fashion: "Ladies and gentlemen—You see here some poverty-stricken blood [an almost colorless solution of phenolphthalein] taken from the veins of a man supposed by the doctors to be dying, but now happily restored to health by my great rejuvenator. The doctors said that his blood had become so poor that he could not live; but they didn't know I was about. When I pour a few drops of my rejuvinator [ammonia] into this worn out stuff, you see it instantly transformed into fine rich blood. This is the way it acted on Mr. Jones, and that is the way it will act on you. Five shillings a bottle, please." And he sold a dozen.

The next experiment I have to show you is a conjuring trick, introduced by the great Heller, and is somewhat similar in principal to the last. The chemicals he used were different, but the phenol and ammonia might have been used with equal success. On these cards we have a number of ladies' names; one of the audience will please select one and retain it. Now, if some one will step on the platform, I will reproduce on his arm, without touching it, the name on the card. Of course, a few passes must be made in front of it, and the aid of a few magic words invoked. Now, you see, the name has appeared on the arm, and you can see that it is the same as the one on the card. You will be partly prepared for the explanation, which is simple. The cards all had the same name written on them. That name was painted on the arm beforehand with tincture of iron, which became invisible on drying. In my hand I held a little india-rubber ball containing a solution of sulphocyanide of potassium, which I sprayed on the iron, producing the blood red writing on the arm. A trick with the spray may be performed by any one as follows; Sprinkle over a dry white rose some fine aniline dye (red by preference), then shake off the bulk of it. What is left will not be noticeable. Then spray some water on the flower and it will be transformed into a colored one, a very small speck of the dye being sufficient to color a quantity of the liquid.

To show the effects of color in analytical work the following experiment may be performed: We have here some solution of prussiate of potash. A little poured into this—solution of sulphate of iron—turns it blue; poured into solution of nitrate of bismuth, the latter turns yellow; while solution of sulphate of copper turns brown. Again, look at the results of the mixture of the contents of these five test tubes. The first one, a colorless solution of iodide of potash, is poured into a solution of bichloride of mercury, also colorless. The result is the production of a scarlet color, owing to the formation of iodide of mercury. The third tube contains a strong solution of iodide of potash, which possesses the property of redissolving the iodide of mercury. When this clear fluid is added to the contents of the fourth tube, which contains oxalate of ammonium, a white chemical is formed, which is turned black as it comes in contact with the sulphide of ammonium in the fifth tube.

Now, take a sheet of paper and write on it with some solution of sulphate of iron, a practically colorless solution, representing the river-water impregnated with iron. Now, if the writing is sponged over with this solution of tannin it turns black at once, real ink being formed. We will presently see how this combination is utilized by conjurers. But while we are treating of inks I will show you how to produce a blue ink in the same way, with two colorless solutions. On this paper I will write down any suggested word with the solution of iron. After drying it I spray on it a little solution of ferrocyanide of potash. The result, you see, is to produce visible blue letters from invisible ones, a new chemical being formed by the combination of the other two, which is distinguished by a blue precipitate, as the tannate of iron is by a black. Now for the promised conjurer's trick. We have here two bottles, filled respectively with ink and water, and we desire to make them change places. They must be covered with handkerchiefs and the conjurer's wand brought into play. Watch me closely. We will put in the corks, so that nothing can possibly be introduced into the bottles. The magic having worked sufficiently, I lift the handkerchief covering the ink, and we see that the ink is changed to water, with fish swimming in it to show that it is the genuine article. On lifting the other handkerchief we find that the opposite change has taken place—the water being changed to ink. The ink is produced, as you may guess, by having a little bottle of iron concealed in the cork and emptying it into the water, in which some tannin had been previously dissolved. Real ink might have been used for the other bottle and made colorless with oxalic acid and another chemical, but we could not then have displayed the fish; the bottle, therefore, was lined with black silk, which was withdrawn with the handkerchief.

Every one is familiar with the use that is made of blue in the laundry, but not every one stops to think of the reason why it is used. This bottle contains indigo dissolved in dilute sulphuric acid and mixed with some carbonate of potash. Observe the effect it has on these fabrics. The white cloth becomes blue, the red changes to violet and the yellow to green. The blue indigo dissolved in this manner indicated acts on the colors of the fabrics as you have seen, one color blending with another to produce a third. Time is nearly up, but you may have patience enough to give your attention to another trick sometimes performed by conjurers, and based also on chemical color changes—I mean the pouring of a number of different fluids from one bottle. We will fill this bottle up with pure rain water. Now we will fill up the glasses, putting something different each. The first is port wine, then comes sherry, then claret; now we have milk, now champagne, and ink Into the last glass we pour water, to show that there is no deception about this magic bottle. The magic was performed by a little iron I had previously put in the bottle and by small quantities of different chemicals put in the glasses, the iron acting on these developing the various colors. The last illustration I will bring under your notice will be connected with photography, perhaps the most important application of chemical color changes. This photo of a leaf was taken after this fashion: A sheet of paper was brushed over, by candle light, with a solution of citrate of iron and prussiate of potash, then the leaf was laid on the prepared paper, covered with glass and exposed to sunlight. The action of the light darkened the parts of the paper exposed to it and produced the impression.

CHEMISTRY OF BREAD-MAKING.

In explanation of the changes that occur in the process of bread-making, two chief hypotheses have occupied the field. The older of these assumed that starch in the dough is transformed by a diastase, cerealine, into dextrine and maltose, and that the sugar thus produced is split up by the yeast used as leaven, so that a normal alcoholic fermentation results. The more modern theory yields the initiative to a bacterium, *Bacillis glutinis*, which is supposed to act only upon the gluten, transforming part of it into peptone by means of a diastastic secretion. Continuing its activity, it breaks up this peptone into carbonic anhydride, hydrogen, nitrogen, alcohol, and several other bodies. In 1888, however, Dünnenberger concluded, as the result of a series of fresh experiments, that yeast ought to be considered the only essential agent in the fermentation of bread; that the fermentable substance is maltose, produced at the expense of part of the starch in the flour, under the influence of cerealine: and that in the normal process bacteria constitute an absolutely useless impurity. On the other hand, Dr. Popoff, in 1890, obtained from the dough of bread, made in a space free from oxygen, an anærobic bacillus which, introduced into fresh dough, was capable of raising it in the same manner as ordinary yeast. It was a rod-shaped bacillus with rounded ends, and did not form pores. Said to resemble Peter's bacillus A, it could also live ærobically; and, producing lactic acid, it gave rise to the ordinary phenomena of panic fermentation in dough. However, this bacillus was not claimed to be the essential agent in the fermentative process, and the main question appeared to be left an open one. M. Léon Boutroux, therefore, set himself the task of endeavoring to solve the problem whether the part of the leaven useful to the baker is a yeast, or a bacterium, or an association of several micro-organisms. He also desired to ascertain if the gas that is given off is produced at the expense of the gluten, of the starch, or of the soluble matter in the flour. A brief notice of some of the results has been already published (*Pharm. Journ.* [3], xxii., 406). Having now completed the extensive series of elaborate experiments, which he describes in detail (*Ann. de Chem. et de Phys.*, xxv. [6], 145), M. Boutroux concludes that the alcohol forming yeast is always present in the leaven of bread, and that it may be cultivated in successive batches of dough, multiplying itself to such an extent that a mere trace may be taken in the first place, and after successive cultures in dough it will be found to permeate every part of the mass. The other micro-organisms found in the dough, which are capable of raising it, can not be so cultivated. The presence of tartaric acid, in sufficient quantity to prevent the microbes naturally present in the flour inflating the mass, does not hinder the production of this effect by yeast. Whilst the experiments do not prove that it is impossible that any micro-organism other than yeast is able to raise the dough, they show that, in a leaven obtained by mixing yeast, flour and water, the first is the essential and only agent in the fermentation properly so-called. If any bacteria serve a useful purpose it can only be in the preparation of fermentable matter, that is in the production of sugar. The experiments on the chemical side seemed to indicate that during the fermentation that occurred in bread new sugar is not formed in appreciable quantity at the expense of the starch. The small quantity of sugar that is fermented consists of that which pre-existed in the flour together with what is formed from carbohydrates more readily affected than the starch. The author therefore summarizes his results in the statement that the fermentation in bread consists essentially in a normal alcoholic fermentation of the sugar pre-existing in flour, to which may perhaps be added sugar formed by the saccharification of a small quantity of carbohydrates. With regard to the action of the microbes found in leaven or in dough further experiments showed that these are not only useless but harmful, since they attack the gluten and cause acidity in the dough. At the same time these ill-effects diminish in proportion as the activity of the yeast is great, the gluten being actually protected against the bacteria by the yeast. It is suggested that, since the alcohol yeast is the only micro-organism of use in the process of bread-making, care should be taken by bakers to secure as pure cultures as as possible. And it is anticipated that thus the duration of the fermentative process will be curtailed to a minimum, the gluten remaining intact, whilst the quality of the bread will be sensibly improved.—*Pharm. Journ. and Trans.*

THE TRUE SEALS.

[From *Popular Science News*.]

BY S. L. CLAYES.

Of all the animals that frequent the waters, seals are perhaps the most interesting and human. Their eyes, which are their chief beauty, are very lovely. They are large, soft and brown, and possess a peculiar charm in their innocent, wondering look. When seals are in trouble, great tears roll from their beautiful eyes, while they bemoan their griefs aloud, sobbing and crying very piteously. Scotland, Ireland and Scandinavia are all rich in delightful legends based upon the tradition that in olden times seals were wont to transform themselves into human shape.

Science has separated the seals, or, more correctly, seal-like animals, into two principal families. To one has been given the name of *Phocidæ*. This family includes all of the true seals. The other, *Otariidæ*, is composed of the eared seals, commonly known as sea-lions, sea-bears, sea-elephants, etc. The latter are those fur-bearing seals whose coats have of late become so important an article of commerce. None of these creatures are fishes. They are carnivorous animals, which, while able to pursue their prey for long distances in the water, must still live upon the land and breathe the air through lungs. They, however, spend a great deal of time in and under the water. Even when on land their respiration is so slow that they breathe only about once in two minutes, and they have been known to remain submerged for twenty-five minutes at a time.

Varieties of the true seal frequent nearly all the colder waters of the earth. They abound upon the shores of Greenland, Labrador and Newfoundland, are found about the Shetland, Hebrides, and Orkney Islands, and on the rocky coasts of Scotland and Ireland; they range up the Baltic and through the Mediterranean, make their way into the Caspian Sea, and even invade the fresh water lakes of Russia and Siberia.

Their bodies are long, tapering regularly from chest to tail, and are covered with an abundant growth of double fur—the inner layer being soft and fine, the outer composed of long, coarse hair. This fur is kept well oiled from fatty secretions, and when pressed close to the skin, as it is by the water, forms a warm and nearly waterproof covering. Besides this, the seal carries just underneath his skin a very thick layer of fat, which not only serves as a protection from the cold, but renders the body much lighter in the water. Both the fore and hind legs are so imbedded in the flesh of the body that little more than the paw or flipper projects outside the skin. In front the limbs are adjusted like those of any other quadruped, but the hind ones turn backward, prolonging the body as those of bipeds do, the short tail lying between the feet. The bones of all these four legs are strong, and these, together with the large, powerful paws, thoroughly webbed to their extremities, give great propelling power in the water, where seals are active and very graceful. On land, however, they are sufficiently awkward, their gait being a shuffling crawl, in which their hind feet are dragged, and even the fore feet but little used, the body being thrown forward by a sort of jerking movement of the remarkably flexible spine. But clumsy as it looks, the pace is one of some speed, especially when the animal is making his escape from an assailant.

Seals bring forth their young but once a year, producing usually one, but sometimes two at a birth. The baby seals, which are about two feet long, are round, plump, roly-poly creatures; pretty, as playful as puppies, and very attractive with their quaint ways. At birth they are quite helpless in the water, but after the first fortnight of their lives the mother leads them to the sea to give them swimming lessons. In the beginning they are clumsy enough, and struggle in the novel element, but soon are tempted to paddle and play in the surf, and before long are quite at home in the water.

The food of seals consists principally of fish, and they will chase salmon, of which they have the good taste to be particularly fond, far up the rivers. A fish once caught seldom escapes from their teeth, which are armed with long sharp points, well adapted for holding their prey. Their nostrils are so formed as to be capable of being closed when in the water. Fishermen have a special dislike for seals; they are quite too successful as rivals, sometimes even managing to carry off the fish from the nets. Tamed seals have been taught to catch fish for their owners.

The skin of the true seal is covered with a thick and warm fur, but it is of a considerably coarser and rougher texture than that which is used in the manufacture of the seal-fur coats now so popular. The common seal is the best known to fishermen of any species of the true seal, being the one which is found upon the coasts of Britain and those of New England and the Maritime Provinces of Canada. It is from three to five feet in length, covered upon the back with a yellowish gray fur, spotted and dappled with brown, while underneath the body it is white, more or less pied and mottled. Upon the lips it bears prominent, cat-like whiskers of long stiff hairs. As is the case with all true seals, the external ears are absent, but the sense of hearing is by no means wanting. On the contrary, the queer creature, with its bright, attractive face, appears to be fond of all musical sounds. It will eagerly follow a boat in which a flute or violin is being played, and the ringing of the church bells upon the Orkneys is said to draw the seals inshore from their fishing expeditions to the deep seas. The brain is unusually large, and this variety of seal is, like many others, very intelligent. It is frequently tamed and domesticated, when it comes to recognize its name, answering to its call as brightly as a dog; shows fondness for those about it and a desire for their notice and caresses, and can be taught as many tricks as a puppy.

A seal which was captured when quite a baby became very tame, eating from the hand, lying beside the fire and nestling up against the dogs, who treated the new-comer most hospitably. Owing to the quantity of milk which the little fellow consumed, it was finally thought best to return him to the sea. So he was carried out about two miles from the shore and quietly dropped into the water. But it did not please the little seal at all to be thus abandoned by his friends, and he swam after the boat faster than the men could row, crying so loudly and so pitifully that his owner could not resist his appeal, and lifting him into the boat, took him home again. Another tame seal, after having been repeatedly thrown overboard miles out at sea, only to return as often to his adopted home, when at last he found the door fastened against his entrance, made his way in through a window, and next morning was found peacefully sleeping beside the fire, and overjoyed to greet his friends again. But in the matter of intelligence there is a considerable variation in the different kinds of seals.

The skin of the common seal is sometimes dressed with the fur upon it and used for caps and other articles, and proves exceedingly durable. Among the Indians it is in high repute, and thought very handsome. The tanned skin makes a soft, fine leather, which is much esteemed for card-cases, pocket-books, hand-bags, and similar articles.

The Greenland or harp seal is considerably larger than the common seal, being from six to nine feet in length. It derives its common name from the peculiar markings of its fur, which bears a broad, crescent-shaped band of dark color upon each side of the back. When but a few months old, this seal is clad in a pure white dress of woolly texture; the second year this becomes gray in color; the third it is dappled with dark spots, and by the fifth, the broad bands reaching from neck to tail have become perfectly defined. They are thought to resemble the ancient harp in shape. This seal is found at the extreme north, being met in great numbers in the vicinity of Greenland, Iceland, and other arctic lands. It lives principally upon floating cakes of ice, seldom coming upon the land, congregating in great herds which submit to the rule of a single chief. It has long been known that the harp seal pays an annual visit to the Gulf of St. Lawrence in the months of February and March, where it gives birth to its young; but Dr. C. Hart Merriam collected evidence, a few years since, proving that it not only frequents the River St. Lawrence also, but that it has a tolerably permanent residence there, and is found in considerable numbers as far up as the mouth of the Saguenay. This seal is quite as intelligent and amenable to teaching and domestication as the common seal. It is hunted for its fur and also for its oil, which is peculiarly valuable, being colorless and inodorous, and ranking as the purest of all animal oils.

To the Greenlander the seal is not an article of luxury; it is one of his greatest practical necessities. He hunts it for the sake of its skin and blubber, of its flesh, of its blood, of its entrails even. With the skin these primitive and frugal people cover the boats in which they journey from place to place to seek the fish which forms their principal provision. In the flesh they find a hearty and palatable food. The blood, boiled with other ingredients, makes them a relishing soup. The oil serves not only to moisten their food, but is burned for their lamps and fuel. The sinews serve them for thread. The entrails are used in lieu of glass for their windows and of cotton for their shirts. The stomach they convert into bottles for holding their train oil. The bladders are used about their harpoons. The fur is one of their most essential articles of clothing, and their boots are made from the skin.

There is another and rather curious member of the family of true seals, which is known as the crested seal. The adult males of this variety possess a singular appendage, from which their name is derived. With them the muzzle is rather short, and from it rises a bony crest six or seven inches in height. This supports layers of thick, folded skin, which the owner is capable of distending at pleasure, and drawing, as one would a hood, over its head and eyes. The bony portion of the crest is penetrated by openings communicating with the nose, and the whole can be inflated with air when the animal is under water and has its nostrils closed.

PHOTOGRAPHY IN COLORS.

Lippman, whose researches on this subject have been previously mentioned in this journal, announces in a communication to the French Academy that he has succeeded in improving the sensitive film in both sensitiveness and isochro-

Announcement to Physicians.

NOTE! Scott's Emulsion is now put up and sold by all druggists in a small or fifty-cent size, although the large size is still on the market. We have made this departure to enable you to prescribe Scott's Emulsion in the original package for a trial where Cod-Liver Oil is indicated. It will also insure the genuine Scott's Emulsion being given when a small quantity is called for.

FORMULA: 50 per cent of Finest Norwegian Cod-Liver Oil; 6 grs. Hypophosphite of Lime; 3 grs. Hypophosphite of Soda to the Fluid ounce.

SAMPLE of Scott's Emulsion delivered free to the address of any Physician in regular practice.

PREPARED BY SCOTT & BOWNE, CHEMISTS,

Scott & Bowne Building, New York.

matism. He obtained brilliant photographs of spectra on albumen bromide of silver films rendered orthochromatic by azalin and cyanin. All the colors appeared at once, without the interposition of colored screens, after an exposure of five to thirty seconds. Theory indicated that the complex colors of natural objects should appear in a photograph for the same reason as the simple colors of a spectrum. Negatives were submitted to the Academy which faithfully represented a group of draperies, a many colored parrot, a plate of oranges surmounted by a red poppy, and a stained glass window in red, green, blue and yellow. They showed that the shape of objects is represented at the same time as the colors. Five to ten minutes exposure to electric or sun-light was required for the draperies and the bird. The other objects were exposed to a diffused light for several hours.

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DRIED VS. CANNED FRUITS.

There is not so much demand for dried fruits in this country, canned fruits being very generally preferred. Probably but comparatively few people are aware that as the former are so often teated they are more or less unwholesome. Not many years ago there was put upon the market for the first time very white dried apples, which were, as far as looks went, a decided improvement on the dried apples previously on sale. The improved appearance was due to bleaching, which was done by exposing the green fruit to the fumes of burning sulphur in the evaporator. But the public did not know this, and soon the old fashioned dried apples were at a discount. In time the same process was applied to other fruits, and now, it is said, all kinds are submitted to it.

The matter, after a time, engaged the attention of German chemists, and they found so much zinc in the American dried apples that a decree was issued forbidding future importations unless accompanied by a chemist's certificate that each invoice was free from injurious substances. It was theorized that the zinc found in the dried fruit is from the galvanized trays, which are very generally used in evaporating establishments to hold the fruit while drying. When sulphur is burned in an evaporator, certain chemical changes take place which ultimately result in the formation of sulphuric acid, which is highly diluted, it is true, but even then it acts very quickly upon zinc. Here, as in many other instances of food adulteration, the public are largely to blame—the manufacturers but meet the popular demand.—*New England Grocer.*

◆

The lakes are full of fishes and the air is full of flies;
Resorts are full of pleasures, and the anglers full of lies;
The books are full of stories which are neither dry nor stale
But the little wallet's empty and thereby hangs a tale.
—*Boston Courier.*

The cost of drugs and medicines
Are having such a fall,
Cut prices will bring sicknesses
Within the reach of all.
—*Judge*

ESTABLISHED 1823.

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DISTILLERS OF

Y. P. M. WHISKIES

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FOR SALE BY
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DIOVIBURNIA UTERINE, TONIC, ANTISPASMODIC AND ANODYNE.

A reliable and trustworthy remedy for the relief of Dysmenorrhœa, Amenorrhœa, Menorrhagia, Leucorrhœa, Subinvolution, Threatened Abortion, Vomiting in Pregnancy and Chlorosis; directing its action to the uterine system as a general tonic and antispasmodic it is unexcelled.

FORMULA.—Every ounce represents 3-4 dram each of the fluid extracts: Viburnum Prunifolium, Viburnum Opulus, Dioscorea Villosa, Aletris Farinosa, Helonias Dioica, Mitchella Repens, Caulophyllum Thalictroides, Scutellaria Lateriflora.

ST. LOUIS, MO., June 23, 1888.
I have used DIOVIBURNIA enough to satisfy myself of its merits. It is of unquestionable benefit in painful dysmenorrhœa; it possesses antispasmodic properties which seem to be exerted especially on the uterus.
Dr. H. Tuholske
Professor of Surgery, Post-Graduate School.

ST. LOUIS, MO., June 18, 1888.
I have given DIOVIBURNIA a fair trial, and found it useful as an uterine tonic and antispasmodic, relieving the pains of dysmenorrhœa and a regulator of the entire uterine functions. I feel authorized to give this recomendation.
L. Ch. Boisliniere
Professor of Obstetrics, St. Louis Medical College.

ST. LOUIS, MO., June 18, 1888.
For more than a year I have prescribed DIOVIBURNIA. In those cases that I have been able to follow up, found that they derived much benefit from its use in almost every form of dysmenorrhœa—especially the conjestive form. I am so pleased with it that I now prescribe it almost daily.
T. L. Papin M D
Physician in Chief and Gynecologist to St. John's Hospital.

ST. LOUIS, MO., June 20, 1894
I very cheerfully give my testimony to the virtues of a combination of vegetable remedies prepared by a well known and able pharmacist of this city and known as DIOVIBURNIA. I have employed this medicine in cases of dysmenorrhœa, suppression of the catamenia, and in excessive leucorrhœa, and have been much pleased with it. I do not think its claims (as set forth in the circular accompanying it) to be at all excessive.
Professor of Principles and Practice of Medicine, St. Louis Medical College.

DOSE.—For adults, a dessertspoonful three times a day, after meals. In urgent cases, where there is much pain, dose may be given every hour or two, *always in hot water.* Put up in Eight Ounce Bottles.

To any Physician, unacquainted with the medicinal effect of Dioviburnia and Neurosine, we will mail pamphlets containing full information, suggestions, commendations of some of the most prominent professors in medicine and various methods of treatment. Or to those desiring to try Dioviburnia and Neurosine, and will pay express charges, we will send on application a trial bottle of each.

DIOS CHEMICAL COMPANY, ST. LOUIS, MO.

SEEN THROUGH A MICROSCOPE.

Under the object glass capable of magnifying to five hundred diameters a drop of fresh blood is, to the unaccustomed eye, a rather surprising thing. The microscopist, flattening it out between two thin plates of glass, has spread it to a field many times wider than the glass can take in at one time and the portion actually under inspection is little, if any, larger than the dot over an "i" in very small type. But in this we see that it is still all alive and in constant motion. Though squeezed to a thin film of color apparently, corpuscles are moving about in it as unconstrainedly as fish swimming in water. If the blood is good, numbers of those corpuscles are united in serpent-like chains and travel quickly, as if with a defined purpose of going somewhere, but if the disease has invaded the life current, or it contains foreign matter, the chains will be broken up, short, numbers of the corpuscles detached and a general indeterminateness, uncertainty and sluggishness of movement is observable among them. We note two kinds of corpuscles, red ones—which we are told are those that go to build up tissue and replace that which is wasted by the energies of life—and white ones, about which opinions differ, some holding them to be incomplete red ones, while others affirm them devourers of the effete waste and foreign matter which gets into the blood. Here and there, as the field of observation is changed, we perceive, if the blood is not unusually pure, minute irregularly shaped bodies of foreign matter; some of them crystals; others bacillae, with independent malefic lives of their own and capability for multiplication of their species; others again in what seem to be threads of fibrinous substance, or occasional bunches of what look like entangled hairs. Seeing these things we realize how it is possible for the blood, which as it trickles from a fresh wound seems a thick fluid, to freely traverse channels of the capillary circulation too fine for discernment by the unaided sight, in order that it may reach and sustain every molecule of the living organism; and we begin to understand what pernicious effects are certain to follow upon the presence in it of such foreign matter as is here discovered—ferments which poison the springs of life, crystalline points which tear and irritate the delicate walls of the channels through which they are carried, living organisms inimical to human life which prey upon the tissues and induce diseases of many kinds, clots which lodge in the minute blood vessels of the brain and cause "embolisms" and death, filaments that entangle themselves in the valves of the heart to impede and eventually arrest its action.

No intelligent person can contemplate a drop of his own blood under a microscope without awakening to a new sense of the importance of purifying the life current, the source of all health and strength in both body and mind, the slightest taint or disorder in which is a step toward death. In all the range of medicaments none is of greater service to humanity than the class known as "alteratives," for their work is the expulsion of those seeds of death (which have been planted by infections, excess and neglect of sanitary care) and the rehabilitation of such healthful conditions in the organs converting the nutritive principles of food into blood that they will perfectly discharge their functions. The most valuable drugs for this purpose, known to science, are the active principles of Honduras sarsaparilla, yellowdock, stillingia and mandrake with the addition of pottassium, severally excellent but of far greater potency when administered in combination, in such proportions as are presented by the standard official preparation known as Ayer's compound Extract of Sarsaparilla. The Board of Directors of the Chicago World's Fair were wise in admitting this invaluable medicine to exhibition, among the products of American science which we have best reason to be proud and in rigidly excluding all the so called "alteratives" and "blood-purifiers," its would-be-rivals, as nostrums, worthless and generally actively deleterious compounds.

BUSINESS NOTES.

CHARACTERISTICS OF A POPULAR RAILROAD.

Travelers find unexcelled accommodations and supreme comfort on the cars of the New York Central Railroad. American railways are noted for the advantages which they afford the traveling public, and there are none that surpass this splendidly equipped road.—*Paper Trade Journal.*

◆

Food and Sanitation has over 50,000 readers: Medical practitioners, sanitary inspectors, Food and Drugs Act inspectors, wholesale and retail grocers, weights and measures inspectors, town clerks, solicitors concerned with the Food and Drugs and Public Health Acts, surveyors, medical officers of health, and the general public. It is published in London, and is one of our valued exchanges.

◆

HEALTH FLOUR.

This is what Farwell & Rhines say of this special product of their manufacture:

Through the manufacture and sale of our "Special Diabetic Food" and "Gluten Flour" we have been brought into intimate association with the medical profession, and also with many sufferers from dyspepsia, diabetes and wasting disease, and have recognized the great need for a first-class family flour, which should be, not a cure, but a preventive of these diseases.

At great expense, and after much experimenting, we have produced a flour comparatively free from starch (the fermenting and heating property in grain), but abounding in gluten and the phosphates, to which we have given the above name.

It contains every essential to the growth and nourishment of the human body, is invaluable to all who need a recuperative and invigorating food, and particularly suitable for children.

The life and strength-giving properties of twenty bushels of three kinds of the best wheat, extracted by a peculiar process of our own, are necessary to make a barrel of it. Hence it costs a little more than common flour, but it makes much more and better bread, and in nutritive, health-giving value, it is the family flour *par excellence.*

◆

DEAFNESS CANNOT BE CURED.

By local applications, as they cannot reach the diseased portion of the ear. There is only one way to cure deafness and that is by constitutional remedies. Deafness is caused by an inflamed condition of the mucous lining of the Eustachian tube. When this tube is inflamed you have rumbling sound or imperfect hearing, and when it is entirely closed, deafness is the result, and unless the inflammation can be taken out and this tube restored to its normal condition, hearing will be destroyed forever; nine cases out of ten are caused by catarrh, which is nothing but an inflamed condition of the mucous surfaces.

We will give One Hundred Dollars for any case of deafness (caused by catarrh) that cannot be cured by Hall's Catarrh Cure. Send for circulars; free.

F. J. CHENEY & CO., Toledo, O.

☞Sold by druggists, 75c.

APPLE PIE AND CHEESE.

Full many a sinful notion
  Conceived of foreign powers
Has come across the ocean
  To harm this land of ours;
And heresies called fashions
  Have modesty effaced;
And baleful, morbid passions
  Corrupt our native taste.
O tempora! O mores!
  What profanation these
That seek to dim the glories
  Of apple pie and cheese!

I'm glad my education
  Enables me to stand
Against the vile temptation
  Held out on every hand;
Eschewing all the tittles
  With vanity replete,
I'm loyal to the victuals
  Our grandsires used to eat!
I'm glad I've got three willing boys
  To hang around and tease
Their mother for the filling joys
  Of apple pie and cheese!

Your flavored creams and ices
  And your dainty angel food
Are mighty fine devices
  To regale the dainty dude;
Your terrapin and oysters,
  With wine to wash 'em down,
Are just the thing for roisters
  When painting of the town;
No flippant, sugared notion
  Shall my appetite appease,
Or bate my soul's devotion
  To apple pie and cheese!

The pie my Julia makes me
  (God bless her Yankee ways!)
On memory's pinions takes me
  To dear Green Mountain days;
And seems like I saw mother
  Lean on the window sill,
A-handin' me and brother
  What she knows'll keep us still;
And these feelings are so grateful,
  Says I, "Julia, if you please,
I'll take another plateful
  Of that apple pie and cheese!"

And cheese! No alien it, sir,
  That's brought across the sea,—
No Dutch antique nor Switzer,
  Nor glutinous de Brie;
There's nothing I abhor so
  As mawmets of this ilk—
Give me the harmless morceau
  That's made of true blue milk!
No matter what conditions
  Dyspeptic come to fease,
The best of all physicians
  Is apple pie and cheese!

Though ribalds may decry 'em
  For these twin boons we stand,
Partaking thrice per diem
  Of their fulness out of hand;
No enervating fashion
  Shall cheat us of our right
To gratify our passion
  With a mouthful at a bite!
We'll cut it square or bias,
  Or any way we please,
And faith shall justify us
  When we carve our pie and cheese!

De gustibus, 'tis stated,
  Non disputandum est,
Which meaneth, when translated,
  That all is for the best.
So let the foolish choose 'em
  The vapid sweets of sin,
I will not disabuse 'em
  Of the heresy they're in;
But I, when I undress me,
  Each night upon my knees
Will ask the Lord to bless me
  With apple pie and cheese!

—*Eugene Field.*

◆

The French way of putting a head on an Anarchist is to take it off.

The self-made man is all right so long as he is not made up of self.

MISCELLANEOUS.

The fact that Croker did not stop in Ireland is easily accounted for. When he left New York he wanted a change.

— —

It is estimated that there are 500,000,000 of sheep in the world, of which about one-tenth are in North America.

It is more important that the police should have clean hands than that they should wear white gloves.

Air can be frozen at a temperature of 296 deg. below zero, and the product, which can be handled and felt, burns, so to speak, with its excessive cold. Frozen air can be produced in any quantity, but its cost, $500 a gallon, is likely to prevent a large business.

Dick—You told me yesterday that you had proposed to Miss Coupon by mail. Did you get any letter in reply?

Harry—Yes; I got two letters.

Dick—Then it is all settled

Harry—Yes. Yes, it is all settled. The letters were "n" and "o."

The New York police were protectors of the people—that is, the people that paid.

When a man makes a blunder he can't blame on somebody else, he decides to say nothing about it.

The woman with a horse and buggy never acts quite as her neighbors would like to have her.

"There goes a man that keeps his word!"

"He does!"

"Yes; no one else will take it."

"Doesn't the boom of the surf prove very unpleasant?"

Mr. Oldstay—No, indeed. After the mosquitoes come you'll never hear it.

Wiggins—Why have you let your alarm clock run down lately?

Fussy—Why, the surprise of not hearing the gong go off always starts me wide awake nowadays.

Dora—I shouldn't think you would like to go horseback riding so much?

Cora—Oh, yes, I do.

Dora—I suppose it is purely a matter of habit.

"How was it Perkins didn't get his degree at college this year?"

"You don't suppose the faculty is going to let a fine football player like Perkins graduate, do you?"

When a man is hanging by his toes from a corner of a high building and expects momentarily to drop, nothing so thoroughly satisfies him as the sudden discovery that he is safely at home in bed.

He (who has just proposed)—Don't give me your answer, now. Think it over.

She (calmly)—I did think it over. I thought it was all over when I saw you flirting so outrageously with the Barstow girl.

COFFEE.

The subject of coffee raising is one that is always full of interest to the reader, and it would seem that the more that is known concerning the little berry, the more we desire to learn about its cultivation and growth. Here are a few facts in regard to the production of coffee in Spanish America which will, no doubt, be read with much interest:

The story of coffee is interesting. A native of Abyssynia, it was brought to Yensen, in Arabia Felix, in the fifteenth century. It was two centuries before coffee drinking began in Europe, and still another hundred years elapsed before the Dutch East India Company began to bring the valuable berry from Java, where the coffee tree was first planted during the last year of the seventeenth century.

In the beginning of the eighteenth century one solitary coffee plant took root in the soil of Martinique, whence sprung the great industry of South and Central America and of the West Indies. It was a Jesuit priest who conferred this great benefaction on the southern half of the American continent. The vessel in which the priest embarked with a half-dozen coffee plants was storm-tossed and driven out of her course, and the supply of water ran short, but the heroic man shared the small quantity distributed once a day to each soul with his precious charge, and thus saved one of the six tender little shoots.

Coffee planting in South America, on an extensive scale, is a comparatively modern industry. The first cargo of coffee shipped to the United States from Brazil, in 1809, was only 30,000 pounds. In 1888 about 212,000 tons of coffee were shipped to the United States, while the total crop was nearly 500,000 tons, worth $120,000,000.

The coffee plants are first reared in nurseries, whence they are transplanted to the regular orchard. A little ball of mold is left about the roots in transplanting. The custom in Brazil is to clear away the virgin forest and dig holes and fill with rich mold and insert the young plants. They are set in rows about 7 feet apart, and begin to bear the second or third year. If not attacked by the coffee-tree worm, the trees, if carefully cared for, will bear for thirty years. They must be pruned, and are not suffered to exceed 12 feet in height. The spreading bushes, several items from one root usually, with their rich dark green foliage, are beautiful at all seasons, and a coffee plantation, with trees in bloom, and when the trees are loaded with berries, is a beautiful sight.

There are three flowering seasons, August, October and December. The yield of coffee depends on the results of the flowering and the state of the weather determines the fruiting from the blossoms. It must be neither too wet nor too dry. When the first flowering season occurs the coffee planter is on the anxious seat, and so is the coffee trader. Their anxiety usually continues generally until the third flowering season is over. If the first flowering results in a good fruiting the planter is comparatively happy, though he is always more or less anxious till his crop is saved. He prays for plenty of hot sunshine and a proper amount of moisture, both being essential to the perfect development and ripening of the berries. The coffee dealers, the trade in general, including brokers, shippers, and exporters and importers, in South America, the United States and in Europe, are always greatly concerned until the results of the flowering are known. They begin to make their estimate as to the crop as soon as the first flowering season is over. They are often mistaken—indeed, usually are—but, from the general concensus of reports received, the price of the old crop of coffee on hand is largely determined. One thing is certain—there will be a demand for all the coffee grown. It is the one crop for which the demand is steadily increasing and slightly in excess of the increased production. There has been an enormous development of the coffee production of Brazil within the last few years by the extension of plantations, but the world's consumption has more than kept pace with the increased product, not only of Brazil, but of Venezuela, Central America and Mexico.—*Export.*

◆

Mildred (still blushing)—Am I the first girl you ever kissed, Gordon?

Gordon—No, my love; but you are the last.

Mildred—Am I, really? Oh, Gordon, it makes me so happy to think of that.

Papa—Are you sure that you and mamma thought of me while you were away?

Little Grace—Yes; we heard a man just scolding awful about his breakfast, and mamma said, "That's just like papa."

It is probable that the saints in Paradise will lament over the exceeding wickedness of the denizens of the other place, just as the good people on this earth shock themselves by contemplating the wickedness of people in faraway lands.

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DRAWING THE LINE.

"I'm sick," whined the tramp at the kitchen door, "and will you please give me just a piece of bread and butter?"

"Nothing mean about you, is there?" responded the charity-lined cook.

"No, ma'am, there ain't."

"Perhaps you would like to have some sugar on your bread?" said the cook with sarcasm.

The tramp drew back dignifiedly.

"Excuse me," he said, "I may have my weaknesses, but I hardly think there is anything in my manner to warrant you in thinking I am a United States Senator," and the intelligent cook apologized on the spot.—*Detroit Free Press.*

There are men who are so in love with their wives' cooking that they seldom notice their wives, and, fortunately, there are men so in love with their wives that they do not notice their wives' cooking.

"And what has become of Jed Thomas?" asked the little old man with the queer whiskers.

"Jed Thomas," said the other, apparently a clergyman, "has joined the great majority."

"Phew! You don't say so! And Seth Blye, is he living?"

"Mr. Blye passed away about a year ago."

"So? But how about old Mrs. Stikton?"

"Mrs. Stikton has solved the great problem."

"Well, it beats all! How they do hang out! And all of 'em up to somethin' oncommon. But it is strange. Hasn't there been any deaths at all down in Seedville since I come away?"

Vast fortunes are said to lie buried and forgotten in the Mexican mountains. Has the promoter been there?

First Lady—I wonder who that is over opposite. Her face is familiar.

Second Lady—Distinctly common.

Only one man in 203 is over six feet high, but there's no limit to the height of womankind—always, of course, not excepting their lovely bonnets, confound 'em!

Never complain of the weather, my son. When it upsets your plans by raining in torrents you should take consolation in the thought that some of your friends are out on a picnic; and when the sun pours down in red hot fury it may not be unpleasant to remember that your neighbor's lawn is being burnt to a dirty brown. One can look upon the bright side, if he will, even of the weather.

It is true that beauty is skin deep, but so is homeliness.

South Carolina is the only State in which no official record of marriages is kept. The Union sentiment was never very strong in the Palmetto State if we remember rightly.

Doctor—Let's see, did I prescribe for you the last time you were here?

Patient—Let me see—oh, yes! I remember now, for I was deadly sick all the next day!

Mrs. Fogg—Of course I shall take baby along.

Mr. Fogg—Of course you won't do any such thing. There are plenty of babies in New York already.

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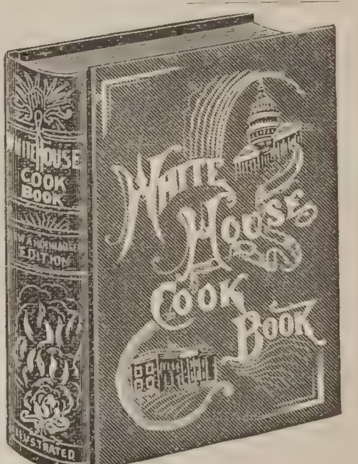

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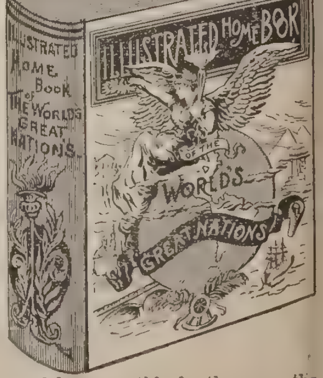

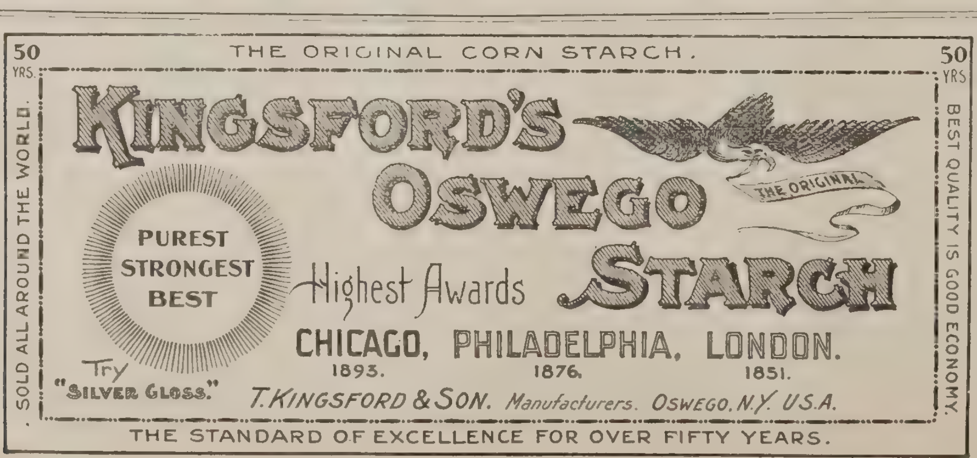

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VALEDICTORY.

With this issue the AMERICAN ANALYST, as such, ceases to exist. It has been sold to the publishers of the *Reflector* of Boston, who will fill all our unexpired subscriptions and the publishers of the ANALYST sincerely hope that our old subscribers will find the *Reflector* so near akin to that which they have found to their tastes in the ANALYST, that they will transfer their subscription renewals to that journal, which the editor takes special pleasure in commending to them.

The editor and publishers of the AMERICAN ANALYST have not taken this important step without serious consideration and many regrets, but one man can only do so much. With three other journals on our hands, each of which required so much time, it became an impossibility to do justice to all; so we were compelled to choose which of the four should be discontinued. Owing to the fact that the AMERICAN ANALYST appeared twice a month, therefore requiring double the time and labor of the others, and from the nature of its field, needing the personal attention of the editor, it was concluded best to dispose of it, and we have done so.

The January issue of the *Reflector* will be sent to all of our subscribers whose subscriptions have not expired. Although the *Reflector* appears but once a month it is twice as large as the AMERICAN ANALYST and therefore gives the same amount of matter in one number as was contained in the space of the latter.

In parting from our subscribers and advertisers we desire to express our hearty thanks to them for their support and many kindnesses received at their hands during the past ten years, and at this season of congratulation to add to our farewell to them one and all our best wishes for a merry Christmas and a happy new year, with a hope for many returns to them of this joyful season.

HOUSEHOLD.

TESTED RECEIPTS.

Every receipt here given is original, has been practically tested by the AMERICAN ANALYST and is therefore confidently recommended.

LOBSTER SOUP.

One large lobster, pick all the meat from the shell and chop fine; take one quart of milk and one pint of water, and when boiling add the lobster and nearly a pound of butter; salt and pepper to taste, and a tablespoonful of flour. Boil ten minutes.

OYSTER PATTIES.

Line small patty pans with puff paste, into each put six small oysters, bits of butter, pepper and salt, sprinkle over a little flour and hard boiled egg chopped. Cover with a crust, notch the edges and bake. Serve either in the pans or remove to a platter.

FRIED CHICKEN.

Dissect and wash thoroughly; rub with salt and pepper; roll in egg and cracker crumbs and fry in boiling hot lard. When done pour off the lard and put in quarter of a pound of butter, a cup of cream, a little flour and some parsley, scalded and chopped fine for the same.

ENGLISH POTATO BALLS.

Boil some potatoes very dry, mash smooth, season with salt and pepper, warm them with an ounce of butter and a few spoonfuls of cream, let them cool, roll into balls, sprinkle over them some crushed vermicelli, and fry a light brown.

BAKED MACARONI.

Break the macaroni in small pieces, soak in a pint of milk two hours, grate bread and cheese. Put a layer of macaroni in a pudding dish, add pepper, salt and butter; then sprinkle the bread and cheese crumbs over it, and continue until the dish is full. Bake until brown.

GAME SALAD.

Take the remains of cold cooked game, pick up fine and cover with a dressing made as follows: Take the yolk of a hard-boiled egg and mix it with a tablespoonful salad oil; stir in a little salt, pepper and made mustard, a dessert spoonful walnut catsup and three of vinegar.

PLUM PUDDING.

One coffee cup of molasses, one of milk, one of chopped suet, one of chopped raisins, four of flour, one teaspoonful of salts, three teaspoonfuls of baking powder, and one egg. Steam three hours. Flavor with wine, in the sauce.

TO BOIL POTATOES.

To boil potatoes so that they will be mealy, fluffy, dry and crack open, they should be washed just before boiling and put them on the fire in cold, slightly salted water and boil them till about half done, throw away this water and replace it with boiling water, also salted and boil till done. As soon as the potatoes can be pierced by a fork, take off the fire pour in a table spoonful or two of cold water and every potao in the pot after the water is poured off, will burst open and will have the appearance and taste that potatoes should have. Try it and see if you have ever eaten as good potatoes.

ADULTERATION.

PUBLIC POISONERS.

A REVELATION IN TRADING IN CONDENSED MILK UNFIT FOR FOOD.

William Porter, of 120 Bidder street, Canning Town, for having 59 tins of condensed milk unfit for food for sale in his shop, was fined £5 or a month, at West Ham on September 19. William Evans, sanitary inspector, said one tin was open, and was marked "1d." Other tins were opened, and the milk was found to be bad. Defendant called Charles Fledger of East India-road, who supplied the milk. Fledger said he bought the milk at a grocer's sale for 5s. a case. Mr. Baggallay: This is a revolution; you're one of the gentlemen that assist to poison the public. I hope you'll be prosecuted.

ADULTERATED BEESWAX.

At Warwick on September 24, William Ware Walker of the General Supply Stores, Market place, was summoned for selling beeswax which was adulterated with 60 per cent of foreign matter. The town clerk, Mr. Brabazon Campbell, prosecuted and Mr. Slade of Wallingford defended. The certificate of the borough analyst, Mr. Bostock Hill, was not disputed, but it was contended that, as the defendant had bought the substance from the Grocers' Association as beeswax, and it was invoiced as such, this amounted to a warranty. The price paid for it was 1s. 3d. per pound, and it was sold at 1s. 9d. per pound. As soon as this prosecution was instituted the Grocers' Association were communicated with, and they then admitted that it was not genuine beeswax, but cerasin. They then altered their price-lists and called it "yellow wax"; but as the defendant had sold the article bona fide as he received it, with an implied warranty, he thought it would be unjust that he should be convicted. The magistrates held that there was no warranty in law, but thought that the defendant had acted honestly throughout, though he had committed an offence under the Act, for which only a nominal penalty of 5s. would be inflicted.

HYGIENIC.

WHY DO OUR TEETH DECAY?

For a long time the question as to why the teeth decay has been the theme of speculation. One of the theories is that by bolting our flour we take out of our food certain minerals which are important for a sound structure, and their absence causes the teeth to be fragile, to easily crack and break, and this process once begun, they soon go to pieces. The remedy prescribed was whole meal bread. There are a good many people who believe their teeth have been saved by this prescription. Others, have, however, failed to save theirs by it.

Another plausible theory, which never gained much recognition, was the opposition; it was that the teeth are kept from decay, not by mineral matter, but by abundance of living matter in them, the so-called protoplasm. The living matter keep the teeth alive and in repair.

A third theory is the one most dentists have adopted. It is that cleanliness will keep the teeth from decay and nothing else will. A majority of us have settled down to this as correct, so far as it goes. Still another theory was sugested in this journal many years ago, that the teeth do not get sufficient exercise on the soft food eaten by a majority of people, and that the remedy is more hard food. This necessitates chewing, which brings more blood into the organs, and they are better nourished and so become strong enough to resist decay. This theory has also received favorable recognition and acceptance by many dentists and physiologists, but in practice little has been done to realize it. Still another theory has recently been suggested. It is that the fifth pair of cranial nerves which supplies the teeth and also supplies many other parts is overworked in our western races, and does not carry to them sufficient nerve force to produce perfect nutrition. The facts which support it are that the Indians and negroes and other uncivilized races almost invariably have splendid teeth. An examination of the mouths of ten of the Indians in "Buffalo Bill's" Wild West Show showed no decay in them. It showed more or less wear on the grinding surfaces, which comes from eating hard food. This gives them plenty of exercise, and so it is difficult to decide whether it is the work that makes them strong, or more abundant nerve force from less overworked nervous systems.

There is, no doubt, some truth in all these theories. Fragile teeth will decay, no matter how well they are cleaned. Strong teeth will often remain sound with no care whatever. Still, care of the teeth is useful. But what is most needed is strong teeth, and no doubt but exercise for them is as beneficial as for the muscles. The exercise cannot take place without a supply of nerve force, and it certainly will bring to the teeth abundant blood, which, if good, will nourish them well and help to make them strong.

It has always been remarked that the negroes of Africa have very fine teeth. Their large jaws furnish abundant space without crowding. One dentist has told me the reason why so many children's teeth crowd on each other is because the jaws are too small, from lack of exercise, to hold all of them. Negroes no doubt do exercise their jaws a good deal more than the whites, else they would not be so large. But the negroes also clean their teeth carefully. A physician who has lived six years among them in Africa writes me that he thinks every negro in the region where he lives spends forty minutes daily in cleaning his teeth. He probably has little else to do to help him pass the time. I do not know whether Indians ever clean their teeth or not, but I will find out if possible. The Hindoo cleans his teeth with great care, and he never requires a dentist, for they do not decay as ours do. In a very old Hindoo medical book, one of the oldest in the world, the "Charaka-Samhita," now being translated into English, I find this sentence: "The stick for cleaning the teeth should be either astringent, or pungent, or bitter, one of its ends should be chewed into the form of a brush. It should be used twice a day. Washing the teeth removes bad odors and tastes." There is much more, but this will suffice.—*Journal of Hygiene and Herald of Health.*

* * *

HOW TO PREVENT CONSUMPTION.

1. In the house the expectoration of a consumptive patient should be received on bits of old cloth or Japanese paper and burned at once, or received in cuspidores or spit-cups containing

Corrosive sublimate,	1 drachm.	Label poison.
Hydrochloric acid	2 ounces.	
Water	1 gallon.	

2. The clothing and bedding of the patient should be laundried separately and thoroughly boiled.

3. Sweeping should be done with a dampened broom, or with wet tea leaves or sawdust on the floor, and the dust removed from the furniture, etc., with a cloth wet with the disinfectant solution.

4. Dishes, glasses, cutlery, etc., used by the patient should be scalded before being used again.

5. It is better for the patient and safer for others that he sleep in a room alone, and especially in a bed to himself.

6. The disease may be transmitted by kissing, especially kissing upon the mouth.

7. Admit an abundance of pure air and sunlight to the patient's room.

8. If the house is damp use proper means to secure dry foundation walls and basement.

9. On the street the patient should either use an expectoration flask (many such are made) or cloth or papers, to be burned as soon as possible. If a handkerchief must be used place it in boiling water or in a disinfectant solution before the expectoration can dry.

TO AVOID CONSUMPTION.

1. Eat meat cooked well done, as this will destroy the germ. Boiling will destroy the germs in milk, and young children who are especially prone to tuberculosis of the bowels should be given only boiled milk.

2. A mother with consumption should not suckle her child as she may communicate it through her milk.

3. Do not moveinto a house or sleep in a room in which a person has died of, or been sick with, consumption until it has been properly disinfected.

4. Avoid as far as possible occupying any length of time with a consumptive person a badly ventilated room, car or vessel.

5. If a tendency to the disease has been inherited, be especially guarded against all sources of infection. In addition, select an outdoor occupation as free as possible from dust; use every means to secure a good physical development, particularly of the chest and lungs; select a dry soil for a habitation, and have living and sleeping rooms freely ventilated and well exposed to direct sunlight.

6. In selecting a mate in marriage choose one free from any inherited scrofulous or tubercular taint.

We trust all persons reading this circular will aid in disseminating the information it contains. It is only by arousing the public to a realizing sense of the fact that *Consumption is Communicable and Preventable* that we may hope to stay the ravages of this disease, which alone slays more than all the other diseases combined.—*Columbus Medical Journal.*

◆

FULL, DEEP BREATHING; ITS NECESSITY AND BENEFITS.

BY REV. J. THOMAS WILHIDE.

In the making of books there is no end. Many good books have been made telling us what to eat, how to eat and when to eat. Others, about power in repose; others, all about exercise for health; others, how and when to bathe. More have been made telling us all about diseases and their cure; few, how to prevent disease; and fewer still, telling us about common air and the necessity and benefits of full deep breathing, notwithstanding it is a subject which should demand the first consideration of the physician and scientist, for certainly it is the bottom stone of the whole superstructure of life and health.

It is a well known fact that we may have poor food, and but little of it, and yet enjoy good health.

Six to nine hours of sleep is needed, yet many persons enjoy good health and live to fourscore with much less.

It is an old proverb that cleanliness is next to godliness, and yet the writer knew a man who said he never took a full bath in his life, wore the same stockings without change from the fall to spring, and he boasted of never being sick a single day.

To develop the organism to its highest possibilities and enjoy perfect health, all the organs must be exercised to the fullest measure and the laws of health rigidly obeyed.

Dr. J. Dorman Steele, Ph. D., says: "Food, air, clothing, heat, sunshine, bathing, drink, sleep are all needed, but not one of these needs is so pressing as air, and we need it every moment lest we die. Oxygen gas is the vital element of the air and the stimulating life-giving principle. No tonic is to be compared with it, and it is not obtainable from the doctors, drug shelves, or chemical combinations, but by full deep inhalations of common air."

The average laborer will take into his stomach about one gallon of solid and liquid food in twenty-four hours, while he has a lung capacity of about eleven pints of air. Should he breathe 18 times per minute, eleven pints multiplied by eighteen, by sixty minutes in one hour, by twenty-four hours, divided by eight pints in one gallon, the result will show a capacity of 35,515 gallons of air breathed into the lungs every twenty-four hours.

But there is always a reserve force in the lungs and none breathe to the fullest capacity, the estimate according to Dr. Pettinkoffer, the celebrated German physician, is about two-thirds of a pint at each inspiration, or 2,160 gallons every twenty-four hours, 788,400 gallons for one year.

Is it not plain we need more air than food, and need every moment or we sicken and die?

The steamer Londonderry sailed from Liverpool for Sligo, 1848, with two hundred passengers. A storm came on, the captain ordered all below and closed the hatches. The cabin was eighteen feet long, eleven wide, and seven high. In six hours, seventy-two were dead and many dying, their bodies convulsed, the blood starting from their eyes, nostrils and ears, all inside of six hours. The captain was as ignorant of the fact that air breathed over is poisonous, as are many of the builders or architects of our great halls, churches, etc., to-day.

Every school boy and girl knows the story of the "Black Hole of Calcutta," how one hundred and forty-six prisoners were shut up in the evening in a room eighteen feet square, one sultry night in Bengal. The only ventilation was two small, heavily barred windows. At six o'clock next morning, when the doors were opened, only twenty-three still breathed. One hundred and twenty-three had died from suffocation.

How often we go into halls, churches, cars, school-rooms and even dwellings and sick rooms, and in a few minutes feel suffocated, stupid and sick.

What is the matter? Why simply the air is impure. We are being poisoned by carbonic acid gas. In a large church in a certain city, from one to three persons fainted or were made so sick as to be compelled to leave the house at nearly every Sunday morning service.

The cause a low ceiling and no ventilation.

On going from a closed room of oft breathed air into the open air, how quickly comes a sense of relief and a few full, deep inspirations of common air quickly revives us. Why?

Because the lungs are now able to free themselves of the carbonic acid gas and other impurities, and take up the life-giving tonic, oxygen gas, from the air, thereby purifying the blood, increasing the circulation, and stimulating every nerve and fibre of the whole being.

Suffocation is death from want of pure air in the lungs.

To live, mature and enjoy good health, the air in the lungs must be frequently changed.

To breathe impure air or an insufficient amount is far more hurtful than an insufficient amount of food, rest, sleep, cleanliness or sunshine, and yet strange to say, we hear but little complaint and practically scarcely any effort toward the thorough ventilation of our public conveyances, halls, churches, school-rooms, dwellings, etc., but we do hear a great hue and cry if our sleep is disturbed or our food is not up to the standard.

Dr. Dio Lewis has well said "that impure air is a cause of consumption," and Dr. Baudeloque, an eminent French physician, says "the repeated respiration of the same atmosphere is the cause of scrofula, and if there be entirely pure air there may be bad food, bad clothing and want of personal cleanliness, but that scrofulous diseases cannot exist."

It is a well known fact to all teachers that pupils confined in a close, ill-ventilated room complain more of pain in their eyes, headache, earache, nausea, indigestion and nervous debility, and they will fall behind fully 25 per cent in their studies more than the same pupils in a thoroughly ventilated room.

Dr. Griscom says, "Now it is not disputed that matter carried from the digestive organs and thrown into the circulation cannot be perfecly nutritive unless it be perfectly aerated or oxygenated."

But how are we to aerate or oxygenate the blood? By taking medicine into the stomach, or inhaling chemical compounds? Never. There is only one way to oxygenize the blood, and that is the natural way free to "Whoever will" breathe full, deep, regular, of pure common air.

Just here some may ask, how shall I breathe, through the mouth or nose? There is only one answer. Through the nose for health. True, we do breathe somewhat through the mouth when speaking and singing, but it is plainly evident to every reasonable thinking mind that the Creator in his wise provision of a nose intended it to be used for breathing.

To breathe through the mouth instead of the nose gives to the face a silly, idiotic expression, and worse than that tends to cause disease of the nasal organs, throat and lungs.

Fully nine of every ten persons suffering from the above diseases, known to the writer, are habitual mouth breathers.

Any system of lung gymnastics that teach mouth inhalation is contrary to the laws of nature, unscientific, and must be hurtful.

The time has come when thinking people are convinced they cannot violate the laws of health and be cured by medicines.

They are also giving more attention to the preventive, as well as to the curative remedies, and especially to this one factor, full, deep, regular breathing of common air as a preventive as well as a curative agency.

Dr. Newman says, "The Chinese used mechanical breath taking as a remedy for many diseases." It is also stated that the people of India 1300 B. C., practiced full, deep breathing several times daily as a healing art.

Caelus, Galen and other Greek and Roman physicians recommended full, deep breathing as a daily exercise for the cure of disease.

Dr. Lehrens, the celebrated speech physician, of Berlin, in his cure of stuttering, bases his method of cure mainly upon the exercise of the respiratory organs by full deep breathing of pure air only.

The writer early in life had a tongue-tied stuttering pupil, whose case seemed hopeless. Yet under his teaching in six months he was able to articulate so that anyone could understand him and his stuttering was practically cured. Would you know the secret of cure? It was simply full, deep regular breathing, and always taking a full breath before attempting to speak.

We all breathe in a fashion but few know the secret of healthful breathing and unfortunately many of our sisters can never learn because their snug, close fitting dress prevents abdominal exercise.

It should be taught in our public schools, practically and naturally, for there is no time in life when more needed than in childhood, to fully develop the chest.

The Rev. John Wesley says when he was a boy of twelve, leaving home for the old Charter House school, his father bid him run around the garden every morning at top speed. This he did for six years, though he often went hungry and cold yet he attributed not a little of his breathing power and tough virile frame which carried him through 88 years of almost unexampled hardships to the habit acquired in his school days of vigorous exercise and full, deep breathing of common air.

If our boys and girls would be thus taught and put it into practice, we might have more reformers worthy of the name.

It is a well-known fact a man's breathing power has much to do with his success or failure in life. To neglect to fully develop it is criminal. Dr. Fr. Bicking says: "As the lungs of themselves do not fully perform their functions and consequently are not sufficiently exercised and kept at the height of their energy, they lose their elasticity and are restrained in their plastic process. As a result various diseases originate in the lungs, and in other parts of the body affected by the condition of the lungs. Above all consumption results."

In quoting Dr. Dio Lewis we believe we quote the experience of the best physicians: "Consumption is incurable by medicines, I admit; that it is often cured by pure air, proper exercise and right habits, no honest physician will doubt."

It is true medicines do ease pain and may assist nature, but nature cures, and food, air, exercise, sleep, sunshine, cleanliness and a restful state of mind do the work.

How needful, then, to obey the laws of nature, which are the laws of the Creator.

It is foolishness to go to the mountains or sea for a change of air unless we breathe in that air, full and deep, that the blood may be purified by the life-giving tonic, oxygen gas, contained therein.

Very sick ones had better a thousand times stay home, unless in a malarial climate and breathe the common air to their full capacity, than make a lonely trip to the mountains and across the sea, unless they breathe! breathe! breathe!!!

When there is any difficulty in acquiring the habit, a good mechanical help is found in a properly constructed breathing tube and then most patient, persistent effort of weeks, months and even years of vigorous practice may be required to effect a perfect cure.

Indeed, enough cannot be said of full, deep breathing. It is no hobby or wild notion, but if you would prove its benefits, practice it daily, and you will increase the circulation, purify the blood, and send it rich and hot, to warm the feet, make ruby lips and plant roses on the cheeks. It will aid your digestion, and give you a clean, sweet breath, promote sleep, quiet the nervous system, strengthen the throat and vocal organs, deepen the voice and increase the chest capacity. It will also cure your asthma, catarrh, bronchitis and prevent as well as cure your lung trouble, unless it is in its worst stages. It will invigorate your whole system.

Some one has said: "In the beginning of disease full, deep breathing is well nigh a panacea." In conclusion, don't be deceived; the best tonic is not found on the drug shelves, but is manufactured in the great laboratory of nature, and is free to all who will breathe full, deep, regular, according to the law of nature.

KISSING.

This is not generally regarded as an infliction —as a thing we *suffer* from; nor has it usually been looked upon as a thing that came within medical nomenclature. Every one, except the doctor, might say something for or against "kissing." Preachers of asceticism and maidenly aunts always condemn it, the former on the ground of its danger to the soul, the latter on the ground that they never did it, and therefore that it is very improper. But a medical contemporary speaks of it as a "sanitary sin." People, especially young people, will soon hate doctors and their theories, if they have not done so already. What next will they not condemn? But the doctors give it as their excuse that it is not they, but the *bacillus* that is at fault, the ubiquitous bacillus they can not ignore, as it will not be ignored. So they see all sorts of pains and penalties resulting from that which has only been regarded as "naughty, but nice."

We are informed that the Sanitary Committee of the Orange (New Jersey) Board of Health has recommended that a circular be sent out to all whom it may concern, "urging everyone to desist, as much as possible, from kissing, as the touching of the lips is likely to convey contagion." After this warning to our American cousins we may expect our County Councils, among their other paternal works, first to enjoin and then forbid under a severe penalty anyone from indulging in the foolish practice of kissing.

The Japanese must be a wise people, as they are said never to kiss; the Germans are equally foolish for they are always kissing. This country adopts the happy middle course, but how long this will be allowed to continue no one can tell. In the meantime Adolph and Angelina must beware, and we take this early opportunity of giving our readers an early warning note.

That there is some danger from kissing there can be no doubt. It is a well established fact that the mouth is full of germs, and many people are not particularly careful about keeping the teeth clean. But it is especially in those suffering from infectious disease that the great danger exists. It is now known that many of the contagious diseases, such as diphtheria, scarlet fever, measles and mumps, enter the system through the mouth and throat, and get absorbed by the tonsils. Hence it is believed by some that careful gargling of the throat when there is an infectious disease in the house will protect one from it. To say the least, it is a wise precaution for nurses and attendants to use some antiseptic mouth wash every hour or two. It can do no harm and it gives confidence.

Some think that consumption can be conveyed by kissing this we think is very doubtful. Diphtheria and scarlet fever are the two diseases that are most dangerous in this respect. Many a mother before and since the Princess Alice have caught one or other of those diseases by kissing a child suffering from them. It is hard to restrain a mother from kissing her dying child even in such circumstances, but the risk is terrible and should not be allowed.

The kissing of children is far too common. Everybody thinks they have a right to kiss a child, and the practice is to be discouraged as much as possible. So also should the too common practice of children kissing each other, that is, kissing strange children, be discouraged on hygienic grounds. It does no good and it may do harm. Children are specially susceptible to contagious diseases, and no precaution is too trifling in their case. Whatever may be said against the bacillus, a knowledge of its presence and habits has done much to throw light upon diseases, the catching of which were before quite inexplicable. Therefore let kissing in future be done on "strictly antiseptic principles."

HOW TO POSTPONE DEATH.

This is what most of our readers have been trying to do during the last two months: recruiting their wasted energies by rest and change. We live in enlightened days, but we live in days of high pressure and keen competition; unless the strain were now and again relaxed the string would snap, and "length of days" would be but a dream of the past. Our forefathers had not the knowledge nor the advantages we have, but then, in some respects, their mode of life was more conducive to longevity; and they had a better start. Now we have not only survival of the "fit" but of the "unfit." These latter are all their lifetime fighting an uphill battle, with one leg in the grave, and the other trying to dodge death. And not only those who are born "unfit," but those who acquire "unfitness" have a constant struggle to postpone death. It is true, writes Dr. Egbert, that some men are born with long life as a birthright, and only need favorable circumstances to enable them to reach a ripe old age. But how many barter their birthright for a mess of pottage—straying away from the paths of health; and by indulgence in unhygienic practices from which even their natural instincts revolt, abuse both mind and body. On the other hand, not a few are hampered from birth with inherited weakness, which permits at best of but a feeble grasp upon life, and renders probable an early death despite the best of care. These two conditions are not unlike financial bequests from ancestors—for one, money has been laid up and a fortune becomes his legacy at birth; the other inherits only debt. Someone has justly likened an unsound constitution to a mortgage on a farm, which eats up all the profits and makes it impossible for the owner to get ahead. Do the best he can, he is unable to clear the debt and the mortgage hangs over his head, liable to foreclosure at any moment. From a consideration of these facts is it not obvious that our physical and mental endowments to our progeny are of the very highest importance and should be made the objects of our daily care and forethought, in like manner as we endeavor to provide for their financial interests? Man's best inheritance from his ancestors is a sound mind and a sound body. With these he may gain both health and happiness; moreover, prosperity would be within his reach, and for one endowed with these qualities poverty need not be feared. Through the exercise of the good judgment normal to a healthy mind, a strong body ought never to be abused, and in the pursuance of health and the requirements of life such an individual would most certainly acquire much happiness.

It has been argued that an advantage may sometimes be observed in even a feeble constitution, for its possessor is likely to learn early in life the importance of careful living and the necessity of rigidly observing all the laws which govern health. The argument advanced is, alas, only too true, for the man who has inherited a vigorous constitution is apt to disregard nature's laws until the punishment for their disobedience rests heavily upon him. Many strong and robust young men and women either fancy their endurance unlimited or do not grant the subject a single moment's thought, for they give free rein to their appetites, gratify their unrestrained passions, laugh at the warnings of friends, heed not the kindly pleadings of nature, and thus persist in the sewing of wild oats until their acre is well-nigh planted. Then comes the infliction of the penalty for the abuse of natural talents and disobedience to nature's laws. How great the fall! How certain the execution of the sentence! Having sown dissipation, vice and the seeds of decay, the harvest can be naught but the results of the growth and development of that which has been planted, to wit: debility, physical ruin,—perhaps death. Let those who would thus openly war with nature and court the certain penalties of such action, consider for one moment how fair and beautiful a garden one single night of frost can destroy!

Granting, then, that the inheritance of a good constitution from healthy and long-lived ancestors is of great importance to him who would attain the length of days, it is also to be admitted that weakly children may develop into robust men and women under the benign influence of good care and hygienic living. An individual of feeble constitution by inheritance may thus reach or at least approach closely the highway of health, prolong his life to old age and transmit to his offspring a larger measure of vitality than he himself received from his ancestors. Can anyone say that one who accomplishes such a mission has lived in vain?

Keeping in step with nature is the best way to postpone death.—Popular Medical Monthly.

MEDICAL.

CONDENSED MILK.

ITS RELATION TO PUBLIC HEALTH AND TO INFANTS' FEEDING.

The attention which has been directed during the past few years to the diseases to which consumers of ordinary milk are liable has led to a number of inventions being offered, each of which is alleged to absolutely sterilize the milk and to guarantee the consumer against any possible risk of infection. The use, however, of such inventions is not only troublesome and costly, but it would be found to be a nuisance in practice. There is no doubt that up to the present condensed milk containing the whole of its cream has many advantages. Of course, like numerous other exceedingly useful inventions, this of condensed milk has its drawbacks, and that many so-called condensed milks that are deprived of their fat are used by thousands of people under the belief that they are full cream milks. We have no objection whatever to the sale of these milks for ordinary use with tea or coffee, where their keeping properties, portability and cheapness afford enormous advantages over ordinary cows' milk, and our opinion is as strong as ever that it would have been distinctly beneficial to the interests of the large firms who can these milks had they carried out what they practically resolved on when the extraordinary judgment in the High Courts that a microscopic announcement was a sufficient declaration of its contents and had labelled them "Condensed Skim Milk," the word "Skim" being as large as the rest of the type. We believe that had this been done an enormous impetus would have been given to the sale of pure condensed milks having the full amount of fat, and that it would have rapidly become known by advantages over ordinary milks, could be relied upon as always being of irreproachable quality, and without any liability whatever to disseminate disease, as is unfortunately the case with ordinary milks, that regard for health and cleanliness would have led to the use of the pure condensed milks to a far greater extent than is at present the case. Our efforts, however, were resisted in what, to our thinking, was a very short-sighted manner, with the result, in consequence of this unfortunate and, from a common sense point of view, indefensible decision of the High Court, that the past year has seen a remarkable deterioration in the quality and character of the lowest classes of condensed milks. The following from a daily paper is an instance in point:

"CHEAP TINNED FOOD AND NASTY.

"SEIZURE OF THE STOCK OF A SHOP IN MILE-END OLD TOWN.

"During the prosecution of a hawker at Thames for exposing for sale tins of bad condensed milk it was stated that defendant had purchased them from a man in Spring-garden-place, Mile End Old Town. The medical officer of health and the sanitary inspector for that district happened to be in the court, and immediately upon the conclusion of their cases they proceeded to the address mentioned and demanded admission, which was refused. Setting a watch on the premises, they returned to the police court and applied for a warrant to enter by force. Armed with this and accompanied by a constable they eventually obtained admission to what appeared to be an empty shop. Here a large quantity of tinned food was discovered, the greater part of which proved to be unfit for human consumption, and was seized and removed. Most of the tins had been stripped of their original labels and several bundles of new labels of various kinds were discovered. At Thames later in the day an information was laid by James Twaits, sanitary inspector, that he had seized 148 tins of preserved pineapple, 18 tins of mulligatawny soup, 12 tins of tomatoes, and 100 tins of condensed milk, the whole being certified by Dr. Thomas Taylor, the medical officer of health, to be unsound. Mr. Mead made an order to destroy the whole lot."

There have been other seizures of a similar character, and unless this sale to the public of trash of this kind can be made impossible, an amount of apprehension will be raised in the minds of consumers of condensed milk which can only have the effect of acting disastrously upon the trade.

Mr. Twaits, the sanitary inspector, and Dr. Taylor deserve great credit for having prevented the sale of this filthy trash. There is no class of diseased food so dangerous as tinned food, as a reference to our article in another column will demonstrate, and all concerned with the sale of such will not only confer a great benefit upon the public, but protect themselves and the good repute of the articles in which they are interested, if, when goods of this class are offered to them for sale, or they know of such rotten tinned goods being on the market, they will communicate at once with the sanitary inspector for the district, and cause the seizure and destruction of the dangerous foods.

DURKHEIM—THE GRAPE CURE.

Durkheim is the headquarters of the grape cure in Germany. Meran, in the Tyrol, and Vevay and Montreux, on the Lake of Geneva, have a high reputation and are much resorted to for the same purpose. But in Germany Durkheim is the place which enjoys most fame. It is on the left bank of the Rhine, in the Bavarian Palatinate, and is distant about fourteen miles due east from Mannheim. The nearest railway station is Newstadt, a small station on the line from Mayence to the French frontier at Forbach. The drive from Newstadt to Durkheim, a distance of about nine miles, is very beautiful and is to be preferred to that from Mannheim. The road is a very good one and runs along parallel to and at the base of the Haardt range of Mountains, on a slope which has been formed by the action of water on the light, sandy and friable soil of those hills. From a few miles to the north of Durkheim to about twenty miles to the south, the Haardt range of mountains on its east side runs almost due north and south, leaving an immense flat plain of about twelve to fourteen miles in breadth intervening between it and the Rhine.

This plain is very highly cultivated and abounds in every sort of crop. The Haardt range is considered to terminate in the neighborhood of Landau, the mountain on the south side of the stream which flows through the town being properly the Vosages, though the one range is merely a continuation of the other. A slope of the same character and due to the same causes as the one on which the road from Durkheim to Newstadt runs, extends from Newstadt to the southern limit of the Haardt range at Landau. The geological character of this slope is different from that of the great plain which extends to the Rhine, the latter being either Tertiary or Alluyium, while the slope is formed of the detritus which has been washed down from the hills. The whole face of this slope is covered with vines. The vine cultivation is on so enormous a scale that nothing in Germany, not even in the Rheingau from whence the most celebrated of the German wines come, can be compared to it in extent. For some five and twenty miles the high road passes through the midst of a succession of vineyards, without a trace of any other cultivation meeting the eye of the traveler. Though the wines of this district do not command such high prices as the wines from the Rheingau and are not much known out of Germany, the cultivation is conducted with as much care as the Rheingau itself, and the wines produced are more generally consumed by the Germans themselves than any other of their wines. The Deidesheimer and the Forster are the best of these wines, and immense quantities of them are sent to all parts of Germany. The former is usually recommended by the German doctors to their patients as being the least acid of their wines. The vineyard from which these two wines come is in the immediate neighborhood of Durkheim. A very good class of wine is made at Durkheim, but grapes grown there are for the most part table grapes, as the Germans say, to be used in the grape cure and for the purpose of export. Immense quantities of them are sent daily to all parts of Germany, and no grapes enjoy so high a reputation in that country. Grapes differ materially from each other in quality. The grape which is best adapted for the purpose of making wine is not generally so wholesome and so agreeable to the taste as that which will produce an inferior wine. About twelve to fifteen different sorts of grapes are known at Durkheim. Many of these, if not most of them, may be often found in the same vineyard. A little practice will enable anyone in a short time to distinguish by the eye one sort from another; for the differences exist between them not only in color but also in form and size, as well as in the thickness of the skins. The leaves also of the different sorts differ in form and size. To the taste the differences of flavor are at once perceptible. Persons who have not been through a vineyard and have not had the opportunity of testing one different sort of grape after another can hardly believe that there is so great a difference in flavor between the different sorts as does in fact exist. The grapes used in the cure are generally of four or five sorts. The two most commonly employed are called the Gutedel and the Austrian. They are both of them white, with thin skins, and are both of them sweet and well flavored. The Black Burgundy grape and the small dark-red Traminer which has been introduced from the Tyrol, are also used in the cure, though not nearly to the same extent as the two already mentioned. The Burgundy grape is a very fine grape and is both in flavor and look very much like what is called in England the Black Hamburg. The Traminer is a very pleasant sweet grape, with a scented or aromatic flavor and a very thick skin. In certain cases it is found to disagree with patients as being too heating. The Riessling, the grape from which all the most celebrated wines of the Rheingau are made, is not used in the cure and is considered by the Germans as a good table grape. Chemical analysis shows that it contains more saccharine matter than either Gutedel or the Austrian, but at the same time its acid properties are stronger. The Burgundy grape is sweeter than the Riessling, but its acid qualities, though less than those in the Riessling, are greater than those in the Gutedel or the Austrian, and therefore it is not so much used in the cure as they are. The acids which are found in the juice of all grapes in greater or less proportions are tartaric, citric and malic acids. Much albumen, gelatine and gum, as well as a considerable quantity of alkaline matter, are also found. Careful analysis has also discovered in all grape juice traces of tannin and even oxide of iron. An excess of acids in the grape is found not only to interfere with the digestion, but also to affect the mouth and the teeth in such a way as to prevent a person from being able to continue the cure for the requisite period.

The grape cure lasts from two to six weeks. The regular sesaon commences on an average about the middle of the first week in September and lasts to nearly the end of October. Every thing depends on the state of the ripeness of the grapes. The amount of grapes daily taken by persons undergoing the cure varies from about four and a half to seven or eight pounds. In some cases even as much as nine pounds are eaten. They are taken three times a day, at the same hours at which mineral waters are usually drunk in Germany—before breakfast, at eleven o'clock in the morning, or two hours before dinner, and at from five to six in the evening. Persons generally commence the cure with from two to three pounds a day, and advance daily in quantity till the larger limit is reached. The skins and seeds should not be swallowed. The largest portion is usually consumed at eleven o'clock. Some doctors do not allow their patients to take any other breakfast than grapes, accompanied by a roll of bread. The usual plan, however, is to permit them to take a breakfast of tea or coffee with bread, but no butter, after the grapes. A strict diet is universally prescribed, all fat, sour or spiced meats, and pastry are forbidden. A small quantity of white light wines is permitted, but red wines, beer and milk must be avoided. The evening meal should be a very light one. The grapes which are used in the cure, both at Vevay and Montrux, are, as at Durkheim, for the most part the Gutedel and Austrian varieties.

There is a small Kurgarten at Durkheim, formerly the garden of the castle, where a band plays at the regular hours appointed for the eating of the grapes. On one side under the trees there are tables covered with large baskets full of the varieties used in the cure. As at Ems and other places where mineral waters are drunk it is the fashion for everyone to buy a glass for himself, so here everyone must be provided with a basket to carry the grapes which he purchases from the attendants. To a stranger the sight is an amusing one, and different from anything to be met with elsewhere. Numbers of people are seen walking up and down in the little garden, each with a small basket full of grapes in his hand, which he is eating with great rapidity, as if he were going for a wager.

On the tables where the grapes are sold there is usually a small grape press, a miniature of the one used in the making of wine, for the purpose of squeezing out the juice or liquor, which is sometimes preferred to the grapes themselves. Persons whose mouths or teeth have been affected by the acidity of the grapes are frequently obliged to give up eating them, and drink the juice or mush instead.

The disease in which the grape cure is considered by the German doctors to be the most beneficial is in the affections of the mucous membrane of the respiratory organs. The secretive powers of this membrane are roused, and it is enabled to throw off obstructions which have assumed a chronic form. Cases of bronchitis and pneumonia are said to have been cured even in patients of a scrofulous constitution; and much benefit is said to have been experienced by persons affected with tubercular consumption in its early stages. Where spitting of blood has set in, much caution must be used as to the amount of grapes taken. Persons affected with any one of these complaints are in the habit of coming to Durkheim yearly from all parts of Germany. Durkheim possesses an advantage over other grape cure places in having close to it a brine spring which enables patients to combine the use of salt baths with the grape cure. The union of the two remedies is said to be especially beneficial in all maladies affecting persons of a scrofulous tendency. Complaints of the heart and liver, as well as other internal complaints, gout or even Bright's disease, are claimed by the grape doctors as coming within their scope and range.

Whether the efficiency of the grape cure in the alleviation of disease be as great and as beneficial as it is claimed to be by its advocates, may be doubted without at the same time impugning the system altogether. In this, as in most other cases, truth lies between the extremes. A free use of grapes is probably good and may be beneficial in the alleviation of many complaints. The action of the vegetable juices upon the animal system is a subject most imperfectly understood. Some of them, it is known, have a powerful action as well in the prevention as in the cure of disease, but how that action takes place is still one of nature's secrets. The man who prohibits wholesale the vegetable juices, and crams his patients with mutton chops and bread is a greater charlatan than the grape doctor who gorges and stuffs them with grapes. The course of regimen pursued by the latter includes all sorts of light nutritive diet, whereas the former forbids even the moderate use of articles of food which seem to be especially suited for the wants of the animal system, and which, in many cases, his patients have a great craving for. Of all the vegetable juices, none seem so well adapted for man as that of the grape. In times of serious sickness, and especially in cases of fever, grapes are frequently the only food which is cared for and eaten with pleasure. Nature tells with an unerring voice its real wants and speaks out with an emphasis that cannot be gainsaid. The food which on occasions of severe crisis, when nature is put to its strain and reduced to its lowest ebb, the human system calls for, must not only be a healthy one when taken in moderation but must also be instrumental in the alleviation of disease. Whether the healthy action of grape juice be due to its tartaric or citric acid, or to its sugar, or to any other of its constituent parts or to them all in combination, neither chemists nor physiologists can tell. The property which the saliva has of turning cane sugar into grape sugar seems to speak in favor of the sugar; but other facts well known to doctors and physiologists will support the claims of other component parts. Like some other special systems, the grape cure may be carried to excess by its practitioners. There is, however, truth in it, and it must not be treated with levity or ridicule. Much good may and little if any harm can be done by it. The process is well worthy to be tried by those who have failed to derive benefit from other systems of treatment. As an alterative, the grape cure is probably a sound system and it deserves more attention at the hands of our physicians than it has hitherto met with. It is as an alterative that it is looked on with favor by many of the most sound and sensible doctors in Germany, and many patients are sent by them from all parts of the country to try it.—*Health Culture.*

INVENTIONS, SCIENCE, ETC.

WONDERFUL ANIMALS.

By Rene Bache, in "Boston Transcript."

Government biological laboratories at Wood's Holl and elsewhere along the coast were very busy during the last summer, studying fishes and other creatures that live in the sea. Sculpins engaged much of their attention. One species, known as the "searobin," has pectoral fins resembling hands. They are discovered to be actually organs of touch, and the fish walks on them over the bottom, feeling for its food as it goes. The slime of these "toad-fishes," as fishermen call the family, is secreted by rows of glands. All fishes have slime secreting organs. In those which live in the depths of the ocean, where it is inky darkness, the slime glands are so modified as to be transformed into phosphorescent spots, the slime being luminous. Thus the finny dweller in the dark unfathomed caves of ocean carries a light about with it to see by. One species recently discovered is called the "Midshipman." It has luminous disks along its sides and belly, on its head, and at the base of its back fin. In fact, it is as profusely decorated with lights as a midshipman is with buttons—whence the name. Each of these luminous disks is a complete bull's-eye lantern on a small scale, having a lens for concentrating the rays and a reflector behind it composed of silicious spicules. The light comes from a layer of phosphorescent cells between the reflector and the lens. No other known fish has such an equipment for illuminating purposes. There are a good many species which have reflectors without lenses, while others lenses without reflectors to brighten the gloss of their luminous spots. But the Midshipman is the only marine dweller thus far discovered which possesses both reflector and lens. It is a veritable animated assemblage of lanterns.

There is wide variation among deep-sea fishes as to their manner of carrying their lights. One kind has a barbel hanging to its chin, on the end of which is suspended what might be likened to an electric bulb, while another sort upholds its light over its head on the highest point of its back fin. In certain species it is believed that the luminous mucus from the modified slime glands keeps running continually down the sides of the fish, rendering the whole animal brilliant. It is considered likely that these lantern-bearing fishes of the depths, which are chiefly head and mouth and highly carniverous, are able to turn their lights on or off at will. This seems probable on account of the nerves and blood-vessels communicating with the slime glands, which has no other apparent purpose. Thus the Midshipman may have the power, on approach of the enemy, to suddenly extinguish his torches; whereas, when seeking prey, he can throw out searchlights and brilliantly illuminate his neighborhood. This phosphorescent light is similar to that of fireflies, which Professor Langley of the Smithsonian Institution declares to be the most economical and perfect of all known lights, giving the greatest illumination with the least waste and without perceptible heat. It would be of enormous value to mankind if the secret of this light which the fishes use for their torch-light processions under the ocean could be discovered. Unfortunately, the nature of it is wholly a mystery, all efforts to find it out having thus far proved unavailing.

Sharks have lately been affording contributions to science. The biologists have been vivisecting them for the purpose of finding out about the functions of the ear, which in fishes is made to some extent on the same pattern as in man. The fact has been known for some time that the ear is not merely an organ of hearing. It has to do with the sense of equilibrium. Light has been thrown on this matter by removing portions of the auditory apparatus of sharks, which are thus rendered unable to maintain their balance in the water. The part of which this faculty seems to depend is the "labyrinth," and the same effect is produced by cutting the nerves communicating with it. Science is paying much attention now to the observation of marine forms, because the animals that dwell in the ocean are the oldest in existence. According to the theory of evolution, human beings, as well as all other land animals, are descended from them. It is difficult to realize that our ancestors in the distant past lived under water and that they made their first vertebrate appearance as sea-worms, but the scientific men insist that such is the fact. Sharks are selected for certain experiments because they are the most ancient of all surviving types of fishes.

Jellyfishes have likewise been made a subject of study at the seaside biological laboratories, and ever so many interesting things have been learned about them. They have a nervous system and a more complicated structure than most people suppose. Many of them are phosphorescent. The most remarkable of them all is the "Portuguese man-o'-war." It looks somewhat like a football as it floats on the surface of the water, with a fringed top, and colored blue and purple. It is filled with air and from the body of it many tentacles hang down. Some of these tentacles are as much as twenty feet long. On coming into contact with an animal, these long dangling arms twine about it and paralyze it by shooting into it hundreds of small darts. The darts are situated all along the tentacles, to which they are attached by threads coiled spirally when the creature is quiescent. But, in response to any irritation, they are projected like so many poisonous needles into the flesh of the victim, which is drawn within reach of the shorter tentacles and absorbed. It is believed that these darts discharge an acid poison. The quantity contained by each weapon is infinitesimal, but the wounds produced by hundreds of them acting at once are not to be despised. Bathers in waters where this jellyfish is found dread it very much. On coming into contact with a human being, it winds its tentacles around him, and it is only with much difficulty and pain that they can be removed, owing to the fact that the darts are barbed. Many other species of jellyfishes are armed with similar darts, as bathers who have met with them know very well. They are sometimes called "sea nettles." There is a curious little fish that lives always inside the umbrellas of jellyfishes, presumably for the sake of the protection thus obtained. Being obliged to leave its protector to procure food, it is sometimes very amusing to observe its efforts to get back inside of the umbrella after it has been out on a foraging expedition. It is very much afraid of being wounded by the darts, and is apt to find much trouble in obtaining an entrance without touching the business parts of the animal. There are some small jellyfishes which live under the umbrellas of big ones.

At Wood's Holl some attention has been devoted lately to the study of horseshoe crabs, which are more interesting animals than most people imagine. To begin with, they represent by far the most ancient type of existing crustaceans, resembling the "trilobites" of the Palæozoic age, which are found so plentifully in fossil bearing rocks of that formation. They seem survivors of a vanished epoch, their very uncouthness of shape carrying the observer's imagination back to an era when monstrosities overran the earth. One curious thing ascertained about them is that they are nearly related to spiders and scorpions.

Biological work being the study of the life history of animals, an important part of it consists in cutting them up alive. By this means the functions of various organs are observed. The frog is a favorite subject for vivisection. Its circulation and digestion are similar to the same processes in human beings. While its nervous system is comparatively simple, it throws light on that of higher and more complicated animals. The usual method is to inject under the skin of the unfortunate batrachian a small quantity of curari poison, which some tribes of South American Indians use to envenom their arrows. It puts Mr. Frog so fast asleep within half an hour that he cannot feel anything. He is unable to move, yet his heart beats, his blood runs normally, and unless otherwise injured, he will revive in the course of an hour or two. While in this helpless condition, his foot is stretched with threads on a board. Pins cannot be used for the purpose, because they would cause bleeding and interfere with the circulation, which it is desired to examine. Under the microscope the blood coursing through the veins of the foot affords a very interesting sight.

Mr. Frog is fortunate if he gets off so easily. The biologist is very likely to cut open his stomach and draw out for examination a fold of the membrane which encloses the intestines. For this purpose the fold is pinned down to the board, when, from the scientific point of view, it exhibits a very beautiful spectacle beneath the microscope. The membrane contains the important blood vessels which convey the assimilated portions of the food from the stomach to the liver. In the veins the red corpuscles can be seen tumbling along in a continuous stream like stones in a torrent. After such an operation it should be quite possible to preserve the life of the victim by antiseptic treatment, sewing up its abdominal wall. Nothing of the kind is done, however, frogs' lives not being valuable enough to warrant the trouble.

Sometimes the cerebral hemispheres, which are the thinking part of the brain, are removed; thereupon Mr. Frog becomes a mere living automaton. In such a condition he may live for months, never moving except when touched and taking food only when it is put into his mouth. The mechanical functions of his mind are still active, but they only respond to irritation. Similar reflex action is shown by the muscles of a severed frog's leg, which contract when irritated. It will be remembered that the discovery of galvanism was due to this circumstance. Galvani was cooking some frogs' legs for his sick wife in his laboratory, and an electric wire coming accidentally into contact with one of them set it a-dancing. The development of the frog is a favorite study for classes in biology at the universities. The eggs are easily obtained in spring, and are so big that they can be observed to advantage with an ordinary pocket lens. Queerly enough, the whole mass of each egg is transsormed into the tadpole, which is not hatched out of a shell like a fish. The curious metamorphosis of the tadpole into the frog is attributed to the supposed fact that the ancestors of the frog were fish-like creatures, some of which acquired a habit of living on land, lost their gills, and developed lungs. Finally, they became regular frogs, though remaining addicted to an aquatic life, and to this day reverting at the beginning of their lives to their ancient form.

One of the finest biological laboratories in the world is that of the John Hopkins University in Baltimore. Much vivisecting work is done there. The institution uses for this purpose about five hundred frogs annually, which are obtained from the Chesapeake, where they are bred for market in ponds. The dogs and cats employed are vagrants supplied by enterprising boys, who receive forty cents each for dogs and twenty-five cents apiece for cats. Rabbits and guinea pigs are bought from fanciers, and pigeons are got from poultry dealers. A very remarkable apparatus has recently been utilized in this laboratory for experiments relating to the heart. It is simply a glass box, in which the air is kept at a temperature of a hundred degrees. A dog is chloroformed so that it cannot move or feel pain. It is put into the box and its mouth is connected with an air-pump, which keeps up artificial respiration, while the thorax of the animal is cut open, so that the heart can be seen beating. The arteries going to and away from the heart are then cut and connected with bottles of sheep's blood, which has been so treated that it will not coagulate. Thus isolated from the circulatory system, the heart continues to beat, taking in blood from one bottle and forcing it into another. The nervous system of the dog supplies motive power to the heart, which is simply a pumping muscle, the connection of the nerves with the heart being undisturbed. Now it is possible to introduce into the bottles any drug, and a machine makes automatic record of the rapidity and fullness of the heart beats. Thus it is practicable to discover precisely what effects are produced on the action of the heart by various medicines. Knowledge of these effects is very important to medical science, and likely therefore to be of the greatest use for preserving human health and life. For this reason such experiments, which would otherwise seem cruel and horrible, are deemed warrantable.

PHILTERS, CHARMS AND POISONS.

A LITTLE INSIGHT INTO THE SO CALLED PHILOSOPHY OF THE ANCIENTS.

M. Emile Gilbert, of Moulins, France, has lately prepared a new series of sketches, entitled, "Philtres, Charmes, Poisons." Without offering anything like a translation of this interesting work, we shall endeavor to reproduce M. Gilbert's researches in a very condensed form.

In ancient times, and even in the middle ages, all the sciences were confounded under the general term of philosophy. Similarly, all acquaintance with the secrets of nature was known to the priests of Thebes and Memphis as the sacred art. The priests had their laboratories in the public temples, and performed experiments before the eyes of the people. The latter were persuaded of the semi-divinity of the professors of the sacred art, who seemed to them gifted with a power to do in little what the Creator performed in greater things. It is probably to the mysteries of Eleusis that the origin of philters and charms may be dated. From medicinal herbs, tinctures and infusions were made, which, taken after long fastings, induced visions and hallucinations. Nearly all the plants used for these purposes were poisonous. From Egypt the knowledge of the art of preparing these decoctions passed to Greece, and thence to Rome. In these lands the history of poisons is so closely associated with the history of crime that it becomes as difficult to fix with precision the discovery of the former as to trace the underground origin of the latter previous to its public development.

Orpheus, the poet physician, of an era anterior to Homer, is the first known writer to allude to poisons. In his poem, "De Lapidibus," reference is made to vegetable poisons, the scheme of the work being to give an opportunity to Theodomas, son of Priam, King of Troy, to demonstrate the value of the various precious stones as antidotes. Among those enumerated he does not mention amethyst, which in those days had the reputation of preserving from intoxication the happy toper who wore it. Homer seems to allude to philters or enchanted drinks when he speaks of the poison in the cup of Circe, which had the power of changing men into beasts. The historians of corrupt Greece and degenerate Rome frequently relate episodes in which philters are concerned, proving the pharmaceutical skill of the miracle-workers of that epoch. In Rome the profession of a sorcerer was a lucrative one. The women who practiced it held the secret of preparing beverages capable of yielding ecstatic dreams, and, as they pretended, of forcing those who took them to love, hate, or suffer at the will of the administrator.

In the preparation of these decoctions these wretches did not limit themselves to the use of deadly herbs, but even sacrificed young infants to give their charms more certain power. Horace alludes to these nocturnal sacrifices in his fifth ode, and Cicero defended the Pythagorean philosopher Vatinus against the accusation of having sacrificed young children to the infernal gods, and preparing enchanted and deadly draughts. Apuleius describes the ceremonies and practices of the sorcerers and diviners at great length. This author was born about the year 114 A.D., about the end of the reign of Trajan. His early years were passed in the schools of Carthage, and afterwards at Alexandria. He travelled through Greece and the East, and made himself familiar with the rites of the various temples where magic was practiced. His reputation of an acquaintance with the arts of sorcery, indeed, caused him some trouble in his otherwise brilliant career, for, having married a rich widow named Prudentilla, he had to combat the accusation of her relatives of having seduced her affections by philters and enchantments. Among his works his marvelous stories indicate his predilection for the feats of magic. Therein he tells of Meroe, a famous sorceress known to the Indians and Ethiopians, to whom "nothing was impossible, for she could at will lower the sky, solidify the sea, liquefy the mountains and extinguish the stars." By her philters she changed her husband into a beaver; she kept a tavern, and, having trouble with a rival tavern-keeper, she changed him into a frog; while a lawyer who pleaded against her suffered metamorphosis into a ram. Apuleius also introduces us to the house of the famous sorceress, Pamphilia. On the top of her house was a terrace with an uninterrupted view to the east and the west. Spread before her are aromatic plants, such as savory, sage and myrtle; blades of brass covered with cabalistic characters; fragments of wrecked ships; vessels of milk and mead, in which burned frankincense and vervain. Pamphilia could change herself into a bird and fly to him whom she loved. This she accomplished by applying a certain pomade to her body. She broke the charm and regained her natural form by eating roses. Her ointments seem to have had various virtues, however, for a certain Lucius, desiring also to assume the bird form, stole some pomade from the dwelling of the sorceress, and found himself changed into an ass.

These stories show how readily the ancients accepted the wildest fables of magical prodigies. In these days the composition of the usual philters of the Romans is pretty well known, and we have learned how easily, under the influence of certain narcotics, the reason of man can be so overthrown as to easily believe itself possessed of the powers of the heroes of fabulous stories. Administered in strong, though not in fatal, doses, certain substances will for a time annihilate the intellectual faculties, or predispose them to a sentiment of the impossible and the supernatural. In Rome, about the time of Nero, the passion for philters was pushed to its extreme limits, and often, according to Pliny, death was the penalty of indulgence in the wild excitement. The people only sought to encourage their criminal passions, and they little recked of the ravages which these poisonous beverages wrought on their individual and national organism. The wealthy classes could buy flatterers and intriguers of every kind. Nearly every senator had his private astrologer, who predicted for his patron the empire of the world. Thessalian sorceresses and Chaldean magi, quacks, jugglers, serpent-charmers, and Eastern dancing girls elbowed each other in all the public places. These corruptions were introduced chiefly by Greeks, who insinuated themselves into almost every great household, and imposed their fashions, their language, and their vices on women, children, slaves, and ultimately on nearly all the higher classes. The sons of Romulus became the imitators of the Athenian idlers. In this atmosphere of corruption, debauchery and gambling, no wonder the diviner and the poisoner flourished; the one to predict the death of a rich parent or creditor, the other to fulfil more promptly the prediction. At that time Locusta established her famous laboratory of poisons on the Palatine, and there she made her experiments on the vile bodies of poor slaves with some new drug destined to render prematurely immortal some Claudius or Brittannicus. Now and again some practitioner of the magic art was ostentatiously banished, but most of them flourished, and their numbers were continually augmented by new arrivals from Thessaly, Pontus and Arabia. Their art, always accompanied by fantastic practices, by visions and prodigies, mainly consisted of two branches; the preparation of remedies and the compounding of love philters.

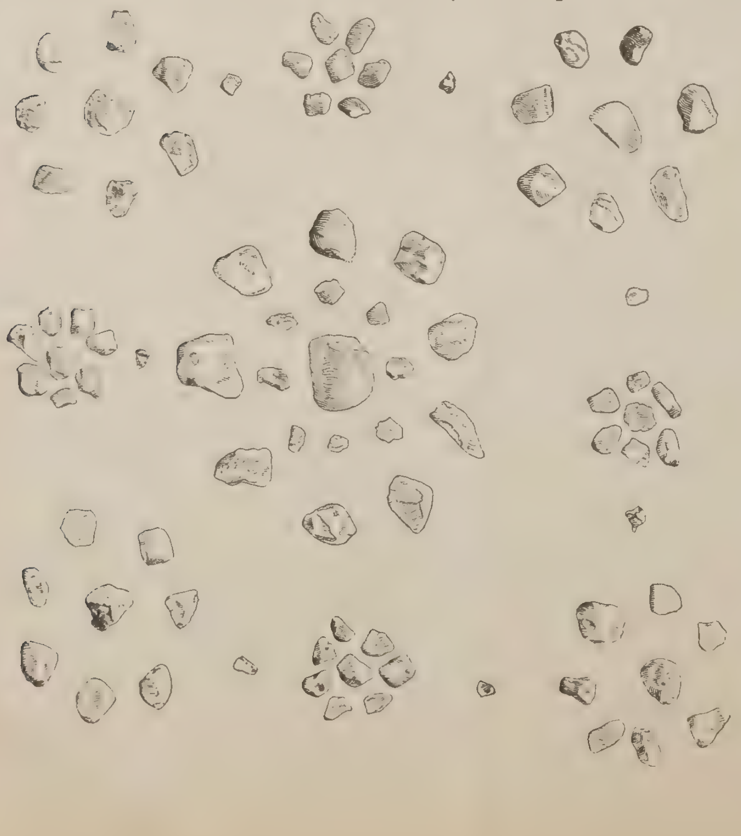
Among the pretended remedies, to quote only two from a thousand, may be mentioned the ointment of Columbus, so called because it was applied, as Suetonius tells us, by the order of Caligula to the wounds of the gladiator Columbus and caused his death, because the Emperor, who prided himself on his manipulation of the sword, has been foiled by this impolitic fencer; and the deadly gargle which Nero caused to be given to his tutor, Burrhus, when the latter, complaisant enough for a long time, was beginning to weary of the crimes of his terrible pupil. But Nero himself required some means of shielding himself from the bitter remorse which sometimes his murders awakened. In his sumptuous Golden Palace, therefore, he concealed talismans to protect him against all danger. His bed and the cornice of his Imperial alcove, therefore, were encrusted with precious stones of magical virtues. Among these were the cornu ammonis, a golden-colored stone which procured prophetic dreams; the jasper, which cultivated eloquence; the amethyst, which protected from injuries during intoxication; and the sacred agate from Crete, which guarded against the bites of spiders and serpents. Ardently he sought to learn more of the mysteries of Oriental magic, and to this end he loaded with gifts and received with great pomp Tiridates, King of Parthia, and the magi who accompanied him. These men claimed the power of foretelling the future and talking with the dead, and for these purposes they employed myrrh, frankincense and bay in their enchantments. They failed, however, to teach their art to Nero, and accounted for their want of success by the excuse that nature refused to give up her secrets to anyone whose skin was stained with freckles.

After the murder of Aggrippina, Nero sought to stifle his remorse by the employment of philters, and by recourse to other superstitious practices recommended to him by the curious. Then he heard of Simon, the Magician, who had lately come to Rome. This strange person, who to some gave himself out to be Jupiter and to others described himself as one of the Eons of the Alexandrian philosophers, was accompanied by a woman named Helen. He could make fire burn on water, and could, by means of stupefying compounds, procure visions and hallucinations to

CALCULI DISSOLVED BY THE

BUFFALO LITHIA WATER

The following plate is from a photograph and represents the exact size and shape of Calculi passed by the Hon. T. J. Jarrett, ex-Mayor of Petersburg, Va., under the action of Buffalo Lithia Water.



Statement of Dr. John Herbert Claiborne, M. A., M. D., of Petersburg, Va., ex-Presiden and Honorary Fellow Medical Society of Virginia.

PETERSBURG, VA., Sept. 5, 1892.

E. C. LAIRD, Buffalo Lithia Sprnigs, Va.

My Dear Doctor:—I send by this mail a box of CALCULI, passed at various times within the last year by Hon. T. J. Jarrett, our former mayor, whilst drinking the BUFFALO LITHIA WATER. They give him but lttle pain now when passing. I have never critically examined the broken CALCULI, passed in such quantities from Mr. Jarrett's bladder, but am under the impression that the most of them were MANESIAN PHOSPHATES. There were specimens, however, which presented the appearance of OXYLATES, and, I remember, impressed me specially as being URIC ACID. I do not pretend to account for the mode of their solution by the Buffalo Lithia Water. There is nothing in its analysis which would warrant such results, but THE RESULTS ARE THERE, and seeing is believing. I can only suppose that in Nature's alembic there has been some subtle solvent evolved, too subtle to be caught by our coarse agents, which makes this wonderful disintegration. "There are many things in heaven and earth not dreamt of in our philosophy," and his is a short creed who believes only what he can prove or explain. Faithfully yours, JOHN HERBERT CLAIBORNE.

It is well known that stone in the bladder, for the most part Gout, Rheumatic Gout, Rheumatism, and also various forms of Dyspepsia and Nervous prostration have a common origin, viz.: excess of uric acid in the blood. It is evident, then, from the foregoing statement, that this water must possess extraordinary potency alike in all of these maladies. In Bright's Disease of the kidneys it is well-nigh specific.

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those who would submit to his orders. His coadjutrix, herself under the influence of philters, played the role of Sibyl. The emperor resolved to see him, and received him at the palace into great favor. To please his powerful patron the impostor undertook to confound the Christians, whom Nero hated, by the display of greater miracles than they could boast of. He declared his ability to fly through the air, and Nero, childishly fond of witnessing anything extraordinary, made a great opportunity for the display of this power. The spectacle was to be held at the circus, and there, says Suetonius, this new Icarus rose into the air. But his triumph was short. In a few moments he fell and broke his leg at the feet of the Emperor. Nero was disgusted with his magician, and Simon, sick with disappointment, soon after threw himself from the top of his house and killed himself. Neither the diviners nor the philosophers could satisfy the tyrant; the sorcerers could not tell him what he wished to know, and the philosophers would tell him only what he desired to forget. They and the Christians were engulfed in the same persecution. But in the laboratories of the philter mongers he found often what he wanted, and there is reason to believe that many an illustrious Roman perished from the effects, slow or rapid, of the philters of Locusta

What were the substances employed in the composition of these philters? It is difficult to say with precision, but there is little doubt that arsenic and aconite were their principal elements. At that period the working of the arsenic mines was largely developed, and clearly the commerce in the metal was in a prosperous condition; while the law of Trajan prescribing the penalty of death for the cultivation of aconite throughout the empire is an evident proof that the properties of this plant were but too well known.

AN ILLUSTRATION OF POWER.

If it were possible, says the *Polytechnic*, to place 300 oars on each side of the ocean steamer Campania, making 600 oars altogether each worked by three men, there would be 1,800 men at work at one time. As they could not work continuously for twenty-four hours, but only for a total of eight hours each man, divided into four watches, it would be necessary to have a crew of 5,400 men to man the oars. If six men could develop one-horse power, the total horse power developed by the 600 oars handled by 1,800 men would be but 300, as against 30,000 in the Campania, or the same power would require the employment of 180,000 oars and a crew of 558,000 men to manipulate them.

"Man originates—the monkey imitates," said the professor.

"Then that settles the question of the origin of the species," returned the student. "Man is the original; the monkey the imitation."

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FORMULA: Each fluid-drachm represents 5 grains each, C. P. Bromides of Potassium, Sodium and Ammonium, 1-8 grain Bromide Zinc, 1-64 grain each of Extract Belladonna and Cannabis Indica, 4 grains Ext. Lupuli and 5 minims fluid Ext. Cascara Sagrada, with Aromatic Elixirs.

RICHMOND, VA., Sept. 29, 1891.

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Ed. Virginia Medical Monthly.

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I obtained happy results from the use of NEUROSINE. It is certainly the best neuralgic medicine I have used. I have tried it in some cases of Trifacial Neuralgia, after having tried some of our most powerful remedies. None acted as well as NEUROSINE.

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Editor Memphis Medical Monthly.

MEMPHIS, TENN., Jan. 7, 1891

I have obtained entire satisfaction from the use of NEUROSINE in cases of Neuralgia.

Dean Memphis Hospital Medical College.

CHATTANOOGA, TENN., Sept. 6, 1891.

Having used NEUROSINE in a number of cases I must say the preparation has given better results and more universal satisfaction than any other combination ever used by me. Have tried it in many nervous affections, in some it is a specific, in others a therapeutic agent of very great value.

W L Gahagan

Coroner of Hamilton County.

MCKENZIE, TENN., Feb. 12, 1891.

NEUROSINE had such a happy effect in a case of Neuralgia or Congestive Headache, in which I tried it, often having failed on other things of similar nature. The case was one of long standing Sick Headache of peculiar character. The lady, three days after confinement, without any fever, took severe headache. NEUROSINE relieved her immediately.

R D Erwin

FOURCHE ARCUAULT, MO., March 29, 1892.

I sent about two tablespoonfuls of NEUROSENE to an old lady, aged 84 years; she had been complaining for some weeks with Headache and Neuralgic pains all over her body more or less. She took that small amount and has been quite free from pain ever since, went to church in a farm wagon, 1½ miles, rough road, and is still free from pain and sleeps and eats better. I am well pleased with it.

U. H. JOHNSON, M. D.

DOSE: From one teaspoonful to a tablespoonful, in water, three or more times daily, as may be directed by the physician

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To any Physician, unacquainted with the medicinal effect of Dioviburnia and Neurosine, we will mail pamphlets containing full information, suggestions, commendations of some of the most prominent professors in medicine and various methods of treatment. Or to those desiring to try Dioviburnia and Neurosine, and will pay express charges, we will send on application a trial bottle of each.

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STRIKING AT THE ROOT.

The venders of many catch-penny nostrums vaunted as "infallible cures" have improved upon the cunning of their kind a generation agone. They run to specialties now. Formerly they ran to impossible "cure-alls." One offers a safe and sure panacea for all kidney diseases; another, a certain relief from any sort of headache; another vaunts something that is "sure death to fits," and so on. Each proclaims: "My medicine is honest because it is good for just this one thing and nothing else. It is not a cure-all." But the gelid truth of the matter is that while each may, in exceptional instances, give a little temporary alleviation of some sympathetic ailment, all are absolutely valueless as radical cures—which it is pretended they are. And that this is so must be readily apparent to any one who will bestow a little consideration upon the subject.

The greatest advance in the evolution of modern medical science has been in recognition of the fact that a long category of ailments regarded by our forefathers as distinctive maladies, demanding specific treatment, are really but symptoms of constitutional disorder—almost always vitiation of the blood—and to be cured only by radical removal of the malefic causes. Treating mere symptoms to cure primary causes is on a par with the foily of attempting to extirpate a noxious weed by plucking off some of its leaves, instead of pulling up its roots. Yet it is only a little while since that such purely symptomatic ailments as dropsy and rheumatism were looked upon, even by doctors, as susceptible of specific cure by medicines of merely local effect. It is no wonder that people suffered long then from such complaints and deemed them obstinate, or even incurable.

Skilled physicians now rely almost altogether upon constitutional treatment and administer only as temporary palliations of symptoms, a comparatively small portion of the drugs that used to be deemed specifics. Its conformity to this new light in curative science is what constitutes the great efficacy of Ayer's Compound Extract of Sarsaparilla; for modern treatment of disease has been, in plain words, narrowed down to the purification and vitalization of the blood. This strikes at the root of all diseases, no illness—excepting contagious and infectious disorders—being possible when the blood is thoroughly pure, and infinite numbers of maladies are liable to manifest themselves as symptoms, when the blood is impure or lacking in the protoplasmic element adapted to sustenance of life. Hence this great blood-purifying—or "alterative"—medicine, famous all over the world for its proved efficacy, radically cures the widely various symptoms, for each of which old-fashioned medical practice had a name as a distinct disease. It should never be forgotten that in all cases of disease not immediately ascribable to accident, contagion or infection, Ayer's Compound Extract of Sarsaparilla is the most reliable medicine known to modern medical science. No other has such immediate and thorough effect upon the blood making and excretory organs. Its components, the active principles of Honduras Sarsaparilla (extracted by the cold process), stillingia, yellow dock (of which J. C. Ayer & Co. practically monopolize the world's supply), and other tonics and alteratives, such as are known to have the best effects upon the stomach, bowels, liver and kidneys. Each has a particular service to render, and all, in their harmonious blending, combine for such beneficent effects as are attainable by no other preparation. Recognition of its exceptional value and deserved standing as an officinal preparation, procure for Ayer's Compound Extract of Sarsaparilla the distinction of being the only proprietary medicine allowed to be upon exhibition in the Chicago World's Fair, and the experience of the medical profession and of the public sustains to the fullest degree all the claims made for it.

BUSINESS NOTES.

SCOTT'S EMULSION.

When that famous epidemic, "la grippe," prevailed in Europe and America thousands of people used Scott's Emulsion and were benefited. Such a signal proof of the efficacy of a medicine had scarcely ever before been known. It is not only efficacious in influenza, but in consumption in its early stages, bronchitis (whether acute or chronic), and in fact in all the respiratory organs if you "have a cold," do not wait until it develops into some disease that is difficult to remove, but get Scott's Emulsion at once, and thus save yourself much suffering, and avoid the danger of its settling into a chronic cough. Those who are subjected to great changes of temperature and are therefore liable to contract colds, should keep it on hand. For use in families, it is a food medicine that will give speedy relief and save many doctor's bills.

FUNK & WAGNALL'S STANDARD DICTIONARY.

The publishers announce that the date of publication of Funk & Wagnall's Standard Dictionary will be November 28, at which time the delivery of Volume II will begin; also the delivery of the single-volume edition.

By actual count the Standard Dictionary contains, exclusive of the appendix, 301,865 vocabulary words and phrases, and the appendix of proper names, foreign phrases, etc., contains 47,468 entries, making the total vocabulary of the dictionary 349,333—this after great care has been exercised to exclude all useless words. The immense increase of the vocabulary of the English language appears from the fact that the vocabulary of Webster's International Dictionary is 125,000 and the Century Dictionary is 225,000.

It is remarkable to note the high testimonials the Standard Dictionary continues to receive from leading educational authorities in Europe and America, as Dr. John T. Duffield of Princeton College, N. J., who writes: "It will be conspicuous among the enduring monuments of intellectual life at the close of the nineteenth century. . . . For comprehensiveness of vocabulary, accuracy of definition, judicious arrangement of material, instructive illustrations and admirable typography, it is superior to any other work of its class, and ere long will supersede them, and be recognized as the Standard Dictionary."

Nature, London, Eng., J. Norman Lockyer, the celebrated astronomer, editor, says: "It passes the with of man to suggest anything which ought to have been done that has not been done to make the dictionary a success."

LITERARY NEWS AND NOTES.

The *Arena* with its big Christmas number of over 200 pages opens the eleventh volume, and its increasing bulk as well as the repute of its contributors and the standard and character of its literature indicate its extending influence and prosperity. In the December issue there are contributions from some of the greatest writers of our day, and some of the most delightful and entertaining of the younger American essayists and fictionists. In the former class are Prof. Max Muller, the great Oriental scholar and authority on language and comparative religion, of Oxford University, and Count Leo Tolstoi, the famous Russian novelist and social reformer. In the latter are Hamlin Garland, the author of "Main Traveling Roads"; Will Allen Dromgoole, the Southern story writer; Rev. Minot J. Savage, the famous Boston preacher: R. O. Flower, the editor of the *Review*; Walter Blackburn Harte, the author of "Meditations in Motley"; Henry Latchford and Helen H. Gardener, the popular novelist.

CHARACTERISTICS OF A POPULAR RAILROAD.

Travelers find unexcelled accommodations and supreme comfort on the cars of the New York Central Railroad. American railways are noted for the advantages which they afford the traveling public, and there are none that surpass this splendidly equipped road.—*Paper Trade Journal.*

DEAFNESS CANNOT BE CURED.

By local applications, as they cannot reach the diseased portion of the ear. There is only one way to cure deafness and that is by constitutional remedies. Deafness is caused by an inflamed condition of the mucous lining of the Eustachian tube. When this tube is inflamed you have rumbling sound or imperfect hearing, and when it is entirely closed, deafness is the result, and unless the inflammation can be taken out and this tube restored to its normal condition, hearing will be destroyed forever; nine cases out of ten are caused by catarrh, which is nothing but an inflamed condition of the mucous surfaces.

We will give One Hundred Dollars for any case of deafness (caused by catarrh) that cannot be cured by Hall's Catarrh Cure. Send for circulars; free.

F. J. CHENEY & CO., Toledo, O.

☞Sold by druggists, 75c.

THAT PRINTER.—An enterprising local reporter handed in the following to the city editor of an esteemed contemporary: "A large crowd assembled before Mr. Sellow's fancy goods store this morning and watched him while he was engaged in the interesting occupation of dressing the four large handsome French windows that make his place so attractive. The display was much enjoyed." But the compositors were in a hurry and neglected to put any "n" in the "windows."—*Truth.*

A NEW PRESERVATIVE.

A new process of preserving food has been invented by Heinrich Paulsen of Hamburg, Germany, and he has protected his invention by United States Letters Patent. It is described as a process of preservation of food and similar articles consisting in first submitting plants such as *Gelidium*, *Glocopeltis* or *Chondruz*, to an extracting process by the use of boiling water, the decoction being further boiled together with glycerine and with the addition of antiseptic agents; the substances to be preserved being then enveloped in the mass thus prepared, which is either poured over them or made into receptacles or cases adapted to receive the food to be preserved; whereby the food is effectively protected from contact with the air, and caused to retain its natural properties, taste, flavor and appearance unaltered.

SOUGHT A SEPARATION.

"Do you give gas here?" asked a wild looking man who rushed into a dentist's office on Clark street yesterday morning.

"We do," replied the dentist.

"Does it put a fellow to sleep?"

"It does."

"Sound asleep, so you can't wake him up?"

"Yes."

"You could break his jaw or gouge out his eye and he couldn't feel it?"

"He would know nothing about it."

"How long does it make him stay asleep?"

"The physical insensibility produced by inhaling the gas lasts a minute or probably a little less."

"I guess that's long enough. Got it all ready for a fellow to take?"

"Yes. Take a seat in this chair and show me your tooth."

"Tooth nothing!" said the excited caller, beginning rapidly to remove his coat and vest. "I want you to pull a porous plaster off my back."

◆

AMONG THE RHYMERS.

Only One Medicine Will Do.

"Got ther blam'dest toothache, Doc, you most ever see;
Leastways, it's the darndest one that ever tackled me.
Couldn't smile to save me; fact is, if I'd try,
  One side my mouth'd screw around
'Till it fairly touched my eye.
Tother wouldn't budge an inch, fer thar the trouble lies.
Guess you kin kinder see the lump, taint no slouch for size,
An' every inch of thet air bunch jest fairly makes me hump;
  Jest squint yer eye on that swellin', Doc,
Can't ye see ther darned thing jump?
No, sir ee! don't want it jerked. I know what'll stop it quicker
Then yer forceps or yer oil of cloves, an' thet's a pint o licker;
Jest write me a perscripshun, Doc; before, it always worked,
  An' taint half so hard on yer muscle, Doc,
As if I'd get it jerked.
This tooth has bothered me so much, I know what licker'll do.
What's that ye say! don't believe it aches? Didn't think thet, Doc, of you;
Why, can't ye see thet swellin' thar? Jest take yer hand and feel;
I wouldn't tell ye what ain't so, yer gittin' a square deal.
What's that ye say? A terbacker cud that causes all that swellin';
An' ye don't believe a single word of what I've been a tellin'?"
And the Doctor smiles at the receding form, as he closed the office door,
He's familiar with that toothache, he's been there oft before.

Kellettville, Pa. La Verne A. Barber, M. D.

◆

KISS HER EVERY DAY.

Reader, have you got a wife?
  Kiss her every day.
'Tis the duty of your life
  To kiss her every day.
Tell her that the world is graced
By such as she—the true—the chaste—
Then put your arm around her waist
  And kiss her every day.

Tell her that she's growing prettier
  Every dawning day,
Dearer, nearer, wiser, wittier,
  Kiss her every day.
Many lives are graveward carried,
Wounded, bruised and hurt and harried,
They stopped their sparking when they married.
  Often that's the way.

Tell your wife how much you'd miss her
  If she went away;
Take her in your arms and kiss her
  Forty times a day.
Tell her she's your life and crown;
Never leave her with a frown;
Keep your ugly temper down,
  And kiss her every day.

Winter, summer, rain or shine,
  Never sulk and blame;
Spring or autumn, never whine
  For your own good name.
Sometimes she'll be cross and cold
  Never mind—she's good as gold;
Let her have her little scold,
  And kiss her just the same.

When there's something wrong with baby,
  Kiss her every day.
'Twill help to soothe her worry, maybe,
  Kiss her every day.
Kiss her when her soul is sad,
Kiss her when her heart is glad.
Be your fortune good or bad,
  Kiss her every day.

—*Toronto World.*

◆

A fence running around a house is not considered perpetual motion.

"Money's awfully tight, isn't it?" "Yes, I haven't even any loose change."

A Boston woman speaks of a dirt wagon as "real estate conveyance."

From the way some men offer prayers it is difficult to tell whether they are ministers or auctioneers.

Another proof that summer is here is that freckles have begun making their appearance in spots.

In dress circles, the divided skirt seems to have fallen flat. Another case of "United we stand, divided we fall."

Mathilde. "Mr. Hungerford is a man who thoroughly believes in himself."

Elaine. "How very gullible he must be."

Bluffkins wandered in at the club the other night and drew his chair close to the fire.

"I wouldn't be an Englishman for anything!" he ejaculated. "They have the most gluttonous appetites on record."

"You cawn't prove that, by Jove!" said Mr. Algernon Hawkins, who lived on chops and swore by her Majesty.

"I can," replied Bluffkins, with unruffled composure, "and here is the proof. I was riding home in an electric last night. Two Englishmen sat next to me. 'I 'ave just bought a stove,' said one. 'So 'ave I,' said the other. 'But mine is the best on earth; it cooks my breakfast in 'alf an hour,' said the first. 'Jove!' said the second, 'that isn't anything. I can 'eat my stove in five minutes.' "

And even Mr. Algernon Hawkins acknowledged that the Englishman did have a pretty solid appetite.—*Boston Budget.*

Strange, even to irreverence, were the titles of some of the sixteenth and seventeenth century sermons. Of such were these following: "Baruche's Sore Gently Opened and Salve Skillfully Applied," "The Snuffers of Divine Love," "A Spiritual Mustard Pot to make the Soul Sneeze with Devotion," "Crumbs of Comfort for Chickens of Grace." "A Balance to Weigh Facts In," "Matches Lighted at the Divine Fire," etc.

There are about 105 women to every 100 men.

One-quarter of the population of the world die before the age of 17 years.

Only one in 1,000 lives to be 100 years old, and only six in a thousand reach 75.

Difficulties of Education.—Tommy (who has been studying with but poor success)—Pop, my teacher says history repeats itself. Does it?

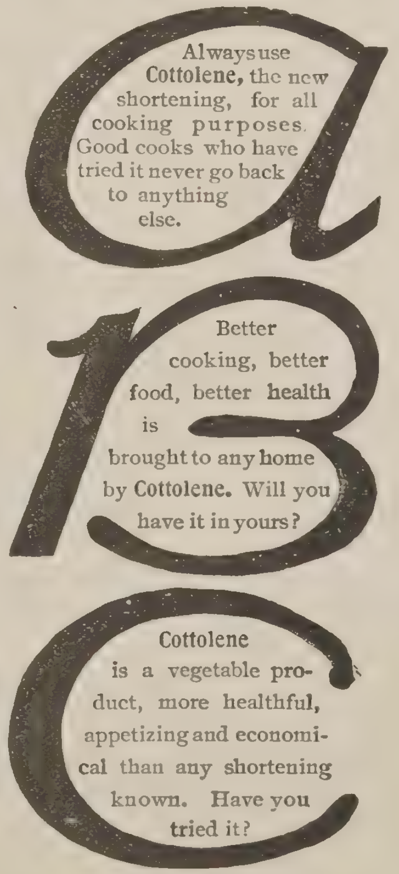
Tommy's Pop—Yes, my boy, sometimes.

Tommy—Well, I wish mine would repeat itself 'cause I can't.

Weight of Bushels of Various Articles.—Wheat, beans, potatoes, clover seed, 60 pounds; corn, rye, flaxseed, onions, 56; corn on cob, 70; buckwheat, 52; barley, 48; hemp seed, 44; timothy seed, 45; castor beans, 46; oats, 35; bran, 20; blue grass seed, 14. A barrel of potatoes contains 2½ bushels as sold in New York; one barrel of flour, 196 pounds; pork and beef, 200 pounds.

The Differences Between Drunkenness and Inebriety is stated by M. Trelat thus: Drunkards are people who drink whenever they find an opportunity for drinking; persons affected with inebriety are diseased, and drink only when the attack seizes them. Drunkenness is a vice; inebriety is a disease.—*Ex.*

The Parson's Call.—A parson who had a call from a little country parish to a large and wealthy one in a big city asked time for prayer and consideration. Finally some one met his youngest son on the street. "How is it, Josiah?" said the neighbor, "is your father going to B—?" 'Well," answered the boy judiciously, "paw is still praying for light, but most of the things is packed."



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Boston, Philadelphia, Montreal,
San Francisco, &c.

An old woman of undeniable Celtic origin entered a down-town savings bank the other day and walked up to the desk.

"Do you want to draw or deposit?" asked the gentlemanly clerk.

"Naw, oi doant. Oi wants ter put some in," was the reply.

The clerk pushed up the book for her signature, and, indicating the place, said: "Sign on this line please."

"Above or below it?"

"Just above it."

"Me whole name?"

"Yes."

"Before oi was married?"

"No, just as it is now."

"Oi can't write."

"Will he take algebra?" said the principal of a private school to a mother who wished to enter her son.

"No, indeed," was the reply. "He's perfectly honest. He'll take nothing that doesn't belong to him."—*Pittsburgh Chronicle.*

The average person trims off the thirty-second part of an inch from each finger-nail a week, or about an inch and a half every year. The average human life all over the world is forty years. There are 1,300,000,000 people in the world who therefore waste on an average 28,400 miles of finger-nails in a generation.

Customer—Was it because your business was so dull that you discharged half your help?

Dry Goods Dealer—Not at all. The saleswomen wore such big sleeves, you know, that we had to reduce the force one-half or enlarge the shop.

The heavier a man's head becomes the more it swims.

Men in office become disgusting when they sell their honor too cheap; but they probably know what it's worth.

Our police were seen to wear gloves at the recent parade. Can it be possible this was due to their palms having been greased?

The story that a New York woman was bitten while trying to kiss a lion is a sad reflection on the gallantry of New York men.

He (passionately). "Something stirs within me."

She (calmly). "Why don't you drink filtered water?"

The difference between "meddling" and "investigation" is that you always investigate, while it is the other person who meddles.

Letter carriers may be seen collecting letters at midnight, but this doesn't explain why some late males don't arrive till near morning.

Commercial Traveller (popping the question). "Oh! Frauline Anna, may I offer you my heart?—extra quality—durable—indestructible!"

"What are you crying for?" said the Sugar Bowl to the Cream.

"The cook said I was to be whipped," was the tearful reply.

It looks as if Louisiana sugar planters were inclined to raise cain.

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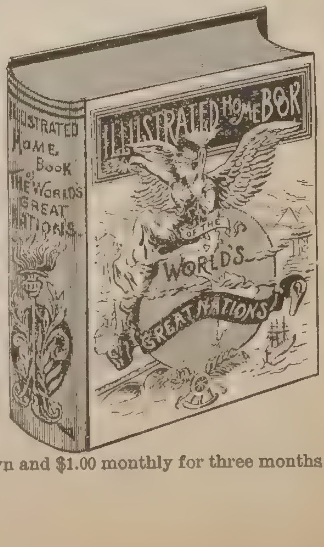

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